

# ENDANGERED PLANT SPECIES OF TAMILNADU



*Cycas Circinalis*, Linn

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## **FOREWORD**

*I deem it a great privilege to write a foreword for a book written by the officer who received and inducted me into the Tamil Nadu State cadre of the Indian Forest Service. By writing this book, the senior author Thiru S. Subbarayalu, IFS (Retd.) is reviving the glorious traditions of the Tamil Nadu Forest department after the monumental works on the botanical wealth of the then Madras Presidency by Capt. R.H. Beddome and Mr. J.S. Gamble, IFS. No significant publication of this nature has appeared though a century has passed by since then.*

*At a time when the paramount importance of the bio-diversity wealth of various countries and regions is recognised and has become the focus of conservation efforts as well as research, a book of this type would greatly enhance the abilities of all those engaged in the task of conservation of nature and natural resources.*

*The State of Tamil Nadu is endowed with extremely rich and varied vegetation with many valuable plants. The authors have in this book very ably brought together information of great practical utility.*

**- V.R. CHITRAPU, IFS**

Chennai - 600 015  
10th Sep. 1999

Principal Chief Conservator of Forests:  
Tamil Nadu, Chennai - 600 015





## **INTRODUCTION**

All the countries have now realized that many species of plants and animals are facing extinction. Of these two categories, plants being the basis of all other forms of life, their extinction will lead to further depletion of other life systems of the world. Some studies have shown that on an average about 10% of plants are facing extinction. Many species of our flora in Tamilnadu have not been collected after the type collections made by Gamble, Beddome, C.E.C. Fischer and others. But it is gratifying to note that in Tamilnadu some species have been relocated even after 120 years. Information on rare plants can be derived only by close observation in the field, not only by botanists and foresters but also by others who have a love for nature.

In Tamilnadu nature has given us a variety of flora such as those existing in Coastal Zones, forests in the plains, mid elevation; and high elevation flora as in Nilgiris, and Upper Palanis. It is also interesting that in some districts such as Tirunelveli where we get flora associated with Sea coast, dry thorny type, dry deciduous to the higher elevation flora of



Kannikatti. With this variety of floral composition in this State, the study of threatened species becomes interesting and also a challenge. In Tamilnadu alone as per Champion and Seth revised classifications, there are 42 forest types. Endemism is also prevalent in many parts of our State. For example Sispara Ghat in the Nilgiris. As per K.M. Mathew, J.B. Britto and N. Rani, flowering plants in Tamilnadu Carnatic region are 2260 species from 983 genera which comes under 173 families. Pteridophytes 111 species from 59 genera belonging to 33 families. Gymnosperms 11 species from 9 genera belonging to 5 families. P.F. Fyson has described nearly 500 species of which 430 are indigenous to the Nilgiri and Pulney hill tops. Out of these 44 are known only from the Nilgiris, and 29 only from the Pulneys. J.S. Gamble has enumerated 4,516 species in the then Madras presidency.

Botanical Survey of India has published 3 volumes of Red data book of Indian plants. The Red data book categories are used by IUCN to indicate the degree of threat to individual species in their habitats. The formal definitions of the Categories are given below :

## **1. EXTINCT**

**This category is used for species which are no longer known to exist after repeated searches. As per IUCN this includes species that are extinct in the wild but surviving in cultivation.**

## **2. ENDANGERED**

**Species in danger of extinction and whose survival is unlikely if the causal factors continue operating.**

**Included are species whose numbers have been reduced to a critical level or whose habitats have been reduced that they are deemed to be in immediate danger of extinction.**

## **3. VULNERABLE**

**Species believed likely to move into the Endangered category in the near future if the causal factors continue operating.**

**This species are those where the populations are decreasing because of over - exploitation, destruction of habitat or other environmental disturbance. This includes species which are abundant but are under threat from adverse factors.**

## **4. RARE**

**Species with small populations that are not at present Endangered or Vulnerable but are at risk.**

These species are usually localized within restricted areas or habitats or are thinly scattered over a more extensive range.

#### **5. INDETERMINATE / POSSIBLY EXTINCT**

Species known to be Extinct, Endangered, Vulnerable or Rare but where there is not enough information to say which of the four categories is appropriate.

#### **6. INSUFFICIENTLY KNOWN**

Species that are suspected but not definitely known to belong to any of the above categories because of the lack of information.

#### **7. OUT OF DANGER**

Species formerly included in one of the above categories, but which are now considered relatively secure because effective conservation measures have been taken or the previous threat to their survival has been removed.

Extinction is not an abnormal fate in the life of a species. Extinction takes place as a part of the evolution of new species. Hence this phenomenon of extinction is a natural process. As per the evolutionary principles there are extinctions of the unfit and survival of the fittest. However the present day changes in the environment and habitat are so unnatural and drastic that the plant species are not



getting the normal time for survival or for adaptation.

This book is meant for use by Foresters, Botanist and nature lovers. It is found that referring to various books and volumes becomes cumbersome especially while in the field or camp. 202 species which are becoming rare and endangered in Tamilnadu have been briefly described using botanical terms. This will help to focus attention on these plant species so that they can be identified in the field. From the Red data book (Volume I, II, III) published by Botanical survey of India 177 species have been described in this book. The balance 25 species have been included from various other sources including personal observations. In the glossary botanical terms used have been explained. District wise list of these species are also given, to help those who are interested in that particular area.

This book has been published with the help of many lovers of plants especially the officers of the Forest Department of Tamilnadu.

My thanks are due to Dr. A.V. Gopalakrishnan who has kindly read the proof and given me valuable suggestions.

Chennai  
September 1999

*S. Subbarayalu*

## **ENDANGERED PLANT SPECIES OF TAMILNADU**

### **1. *Acacia hohenackeri* Craib.**

**Family :** Mimosaceae

**Description :** A climbing shrub with small recurved prickles. Petiole gland oblong, upto 1cm long, pinnae 5 - 6 pairs, leaflets 20 - 30 pairs, 0.5cm apart, oblong, obtuse, truncate at base. Flowers small, 5-merous in globose heads. Calyx companulate, petals more or less united, stamens indefinite free. Ovary 2 - many ovuled. Pods 15 cm long.

**Habitat :** Found in semi-evergreen forests at an altitude of 1800m.

**Distribution :** Endemic. Original collection from Kundhas of Nilgiris (Hohenacker), Coonoor (Bourne). During 1970 collected in Bimka shola, Nilgiris.

**Status :** Rare

## 2. ***Acranthera grandiflora*** Bedd.

**Family :** Rubiaceae

**Description :** It is a silky undershrub with long soft simple hairs. Leaves simple opposite. Size 12 x 5 cm, elliptic, oblong, entire round at apex. Stipules interpetiolar, triangular. Inflorescence terminal, silky bracteate cymes. Calyx tube linear. Corolla pale blue 4 cm long, narrow funnel shaped. Stamens 5. Ovary one celled. Fruit berry, many seeded. Seeds minute.

**Habitat :** In humid dense, evergreen forests, at an altitude of 1000 - 1600 m.

**Distribution :** Highly endemic found only in Evergreen forest within Mundanthurai Tiger Project Area in Tirunelveli District.

**Status :** Endangered

**Value :** Flowers being attractive can be cultivated in gardens.



**3. *Acrocephalus palniensis* Mukerjee.**

**Family :** Lamiaceae

**Description :** Erect herbs, 20 - 40 cm tall, woody stems, quadrangular. Leaves 2-4.5 x 0.5 cm, ovate, margin serrate, pubescent. Flowers terminal, pyramidal heads, densely hairy. Nutlets 0.8mm long, ovoid, dark brown.

**Habitat :** Along margins of evergreen forests at an altitude of 2300m.

**Distribution :** Endemic found only in upper palanis, Dindigul.

**Status :** Possibly Extinct since after the collection of type specimen in 1911 by C.E.C. Fischer, no further collection has been made.

**4. Actinodaphne bourneae** Gamble.

**Family :** Lauraceae

**Description :** A small tree branches, leaves and flowers tomentose. Leaves in whorls, lanceolate. Flowers in umbels. Fruit berry, seeds with thin testa.

**Habitat :** Evergreen Shola forests at about 1800 m, in porous soil rich in organic matter.

**Distribution :** Endemic found only in Shola forest in Upper Palanis.

**Status :** Possibly Extinct after type collection in 1897 by Bourne. No further collection has been made.

**5. Actinodaphne lanata Meisner.**

**Family :** Lauraceae

**Description :** Evergreen tree with lanceolate leaves and black globose berry about 0.75 cm in diameter. Flowers small, dioecious, bracteate sessile. Perianth tube short, lobes 6, subequal. Stamens in male flowers 9. Staminodes in female flowers also 9. Stigma dilated.

**Habitat :** In Shola forests from 1500 to 1800 m.

**Distribution :** Nilgiris

**Status :** Possibly Extinct. After observed by J.S. Gamble during 1889 no further collection has been made.



**6. Actinodaphne lawsonii** Gamble.

**Family :** Lauraceae

**Description :** A small tree branchelets rufous tomentose. Leaves 5 to many in whorls, size 9 x 4 cm, oblanceolate. Inflorescence lateral; rufous tomentose. Female flowers 6 to 8 in umbels; perianth cup shaped.

**Habitat :** Evergreen forests from 1000 to 1800 m.

**Distribution :** Nilgiris, Wyanaad and Coonoor.

**Status :** Rare. Endemic to Nilgiris and adjoining region of Western ghats.

**7. Adhatoda beddomei** Clarke.

**Family :** Acanthaceae

**Description :** A very large shrub, branches glabrous. Leaves oblong-lanceolate, attenuate at both ends, minutely puberulous on the nerves, 12 cm long, 4 cm broad. Nerves about 8-pairs, rather distant. Flowers subsessile, spikes. Calyx 5, the 2 lowest often subconnate. Corolla tube short, 2-lipped. Stamens 2. Disk cup shaped. Ovary 2-celled. The small flowers turn black\$ in drying. Fruit clavate, capsule.

**Habitat :** Found in semi-evergreen forests at an altitude of 800 m.

**Distribution :** Endemic. During 1972 located in Sengumal Estate (near Panagudi) Kanyakumari district, Tamilnadu.

**Status :** Rare

**8. Aerva wightii** Hook.f.

**Family :** Amaranthaceae

**Description :** A many-branched bushy undershrub arising from woody root-stock. Leaves alternate, thick. Flowers spikes, yellowish-white, the Perianth-lobes acuminate.

**Habitat :** Known to grow on the hills in evergreen forest areas.

**Distribution :** Courtallum and Naterikal in Tirunelveli District.

**Status :** Possibly Extinct after 1914 this species has not been collected.

**9. Albizia thompsonii Brandis.**

**Family :** Fabaceae

**Description :** Large deciduous tree. Leaves bipinnate; leaflets slightly falcate, 1.3cm long. Flowers pale yellow, in globose heads, Anthers pink. Pods long, thick, red.

**Habitat :** In deciduous and open scrub forests upto 912 m in altitude.

**Distribution :** Coimbatore District

**Status :** Rare

**Value :** Attractive flowers



**10. *Amomum microstephanum* Baker.**

**Family :** Zingiberaceae

**Description :** Tall herb upto 2 metres with rhizome. Leaves lanceolate, silky tomentose beneath. Flowers spikes glabrous. Corolla white linear. Lip obovate.

**Habitat :** It occurs in shady moist localities at 800 - 1000 m.

**Distribution :** Kalianapandal in Anamalai hills, Coimbatore district. Recently collected in Palghat hills, Kerala.

**Status :** Rare

**Value :** Ornamental Plant

**11. Anisochilus argenteus Gamble.**

**Family :** Lamiaceae

**Description :** A stout perennial under shrub, silvery branches, grooved. Leaves opposite - whirled, oblanceolate, pubescent. Size 16 x 6 mm. Flowers spikes, cylindrical. Corolla bilipped. Stamens 4. Nutlets 4, very small.

**Habitat :** In hills of Western Ghats at an altitude of 2000 m as undergrowth.

**Distribution :** Endemic to South India. Kodaikanal in Dindigul district.

**Status :** Vulnerable. Last collected from Kodaikanal during 1960 by Saldanha.

**12. Anisochilus wightii** Hook.f.

**Family :** Lamiaceae

**Description :** Erect herb, pubescent. Leaves 3 x 2 cm, ovate. Margin crenate, pubescent. Flowers narrow, cylindrical spikes, bilabiate, upper lip short. Corolla pale, much bent, stamens 4.

**Habitat :** In deciduous forests at an altitude of 600 m.

**Distribution :** Anamalai hills, Attakkatti in Coimbatore District. This species has been collected after a long period by Joseph during 1961 from Attakkatti.

**Status :** Rare

**13. Anoectochilus rotundifolius (Blatt.)****Balak.**

**Family :** Orchidaceae

**Description :** Terrestrial orchid, this species is one of the jewel orchids'. Characterised by velvety leaves, veins shiny. Stems creeping below. Flowers solitary, white. Dorsal sepal hooded.

**Habitat :** Grows in the damp floor of evergreen forests.

**Distribution :** Endemic to Highwavy mountains of Madurai district.

**Status :** Possibly Extinct after 1917 no further collection. Now it is reported that this orchid has been located and is being grown in Tropical botanic garden and Research Institute, Pacha Palode, Trivandrum - 62.

**Value :** Garden.

**14. Antistrophe serratifolia Hook.f.**

**Family :** Myrsinaceae

**Description :** Erect shrub. Branches rusty.  
Leaves 15 x 4 cm lanceolate.  
Margin serrate, minute glands.  
Prominent parallel nerves.  
Flowers hermaphrodite.  
Corolla deeply 5 - cleft. Stamens  
5. Inflorescence sub umbellate  
2 - 3 flowers. Berry reddish.

**Habitat :** An erect shrub in hilly places  
and has been reported to occur  
at altitudes varying from 900 -  
1500 m.

**Distribution :** Endemic to Anamalai hills.  
Recently reported from Silent  
valley in Kerala.

**Status :** Rare

**Value :** Garden



**15. *Apama barberi* Gamble.**

**Family :** Aristolochiaceae

**Description :** Shrub, branches covered with long corky lenticels. Leaves alternate, petiole ribbed, lanceolate, acuminate, with shorter side ribs, size 20cm long, 5cm width. Flowers axillary-terminal. Perianth companulate, 3-lobed. Stamens 6; stigma long. Fruit 4 valved capsule.

**Habitat :** Found in evergreen forests at an altitude of 800m.

**Distribution :** Endemic. During 1963 located in Agastyamalai, Tirunelveli district, Tamilnadu.

**Status :** Rare

**16. Aponogeton appendiculatus** Van  
Bruggen.

**Family :** Apiaceae

**Description :** Aquatic herb, Tubers 10 mm long. Flowers white.

**Habitat :** Occurs mostly in brackish waters especially at a depth of 1.5 - 3 m. The inflorescence escapes attention as it occurs at great depths when water is very much turbid, and the leaves are also not quite visible from surface.

**Distribution :** Endemic to South India. Once collected from Spurtank, Egmore Madras, Now confined to Vembanad lake, Alleppey in Kerala.

**Status :** Possibly Extinct in Tamil Nadu, rare in Kerala.

**Value :** Tubers edible.

**17. *Atuna travancorica* Kosterm.**

**Family :** Chrysobalanaceae

**Description :** Small trees, younger parts with silky-grey pubescence. Leaves 1 to 2 cm lanceolate. Inflorescence 5 cm long, axillary, drooping, silky. Corolla pink. Drupe 1 - seeded. Beddome and Gamble have described it as *Parinarium travancoricum*.

**Habitat :** Evergreen hill forests at 600m altitude.

**Distribution :** Endemic. Courtallam.

**Status :** Possibly Extinct. No recent collection.

**Value :** Wood resistant to borers. Seeds yield fatty oils.

**18. *Begonia aliciae* C.E.C. Fischer.**

**Family :** Begoniaceae

**Description :** Herb, rhizome short. Leaves ovate. Flowers pink monoecious, the male above the female flowers.

**Habitat :** Grows on rocks in evergreen forest, Kadalar Valley, Travancore High Range at an altitude of 1500m and Nilgiri Hills Devala at an altitude of 920m.

**Distribution :** Nilgiri hills

**Status :** Endangered

**Value :** Horticultural

**19. Begonia anamalayana Bedd.**

**Family :** Begoniaceae

**Description :** Scapigerous herb with very oblique reniform leaves, the younger very floccose, the older glabrous. The scape is many flowered, much longer than the leaves. Male and female flowers have only 2 sepals.

**Habitat :** Grows on moist regions of forests as under growth

**Distribution :** Anamalai hills. Endemic.

**Status :** Possibly Extinct

**Value:** Garden.



**20. Begonia cordifolia** Wight.

**Family :** Begoniaceae

**Description :** Herb with subterranean rhizome upto 3cm, forming short series of rhizomes. 6 aerial~~s~~ leaves, ovate, variegated. Cordate at base, apex acute. Flowers pale pink, dioecious. Seed ovoid.

**Habitat :** Principally in pockets of humus covered rocky surfaces; mostly in shade but occasionally on exposed moist surfaces.

**Distribution :** Tirunelveli, Western ghats

**Status :** Rare. It is known by very few collections.

**21. Belosynapsis kewensis Hassk.**

**Family :** Commelinaceae

**Description :** Prostrate herb with reddish brown hair, root fibrous. Rooting at nodes. Leaves oblong sessile. Flowers axillary and terminal. Cymes on densely hairy peduncles. Petals bluish - purple.

**Habitat :** Grows on rocks and cliffs constantly moistened by rain or dripping water and spray from mountain streams.

**Distribution :** Endemic to Western ghats Tirunelveli and Kanyakumari. Recently collected from Maramalai, Kanyakumari district at 400m altitude.

**Status :** Endangered

**Value :** Horticulture. Cultivated in Kew gardens.

**22. Bentinckia condapanna** Berry ex  
Roxb.

**Tamil Name:** Kanthapanai

**Family :** Arecaceae

**Description :** Palm, stem solitary 6 to 9m long, 20-25 cm diameter at base. Leaves pinnate, arching. 1 to 1.5m long, leaflets upto 40-60 to 80cm long. Inflorescence with spathe. Fruit ovoid, reddish brown.

**Habitat :** Grows in the moist hill forests. Prefer more or less open slopes between 1000 - 1500m altitude. The area receives high rainfall.

**Distribution :** Tirunelveli and Kanyakumari.

**Status :** Rare

**Value :** Ornamental palm. The terminal bud is edible.

**23. Bulbophyllum acutiflorum A. Rich.**

**Family :** Orchidaceae

**Description :** Epiphyte with pseudobulbs 2-2.5cm. Rhizome stout. Leaves 3 to 5cm oblong. Inflorescence racemed, 6-8 flowered. Flowers creamy. Lateral sepals 1-2 cm, linear-lanceolate, 7 nerved. Petals broadly oblong, 3 nerved, tip rounded; tooth minute.

**Habitat :** Epiphytic herb in semi-evergreen to Shola Vegetation between 1500 - 2000 m altitude.

**Distribution :** Nilgiris, Ootacamund and Coonoor. Narrowly endemic.

**Status :** Possibly Extinct. No recent collections.

**24. Bulbophyllum albidum** Hook.f.

**Family :** Orchidaceae

**Description :** Epiphytic herb with stout rhizomes. Pseudobulb single - leaved. Umbel 6-8 flowered. Sepals lanceolate, acuminate. Flowers cream-coloured, freckled with pale-brown.

**Habitat :** On moist rocks beside waterfalls surrounded by Shola forests and wet evergreen forests. The soil is loamy with rich humus. The habitats are situated in 1500 - 2000 m altitude range.

**Distribution :** Kotagiri, St. Catherines falls in Nilgiri district, Kannikatti in Tirunelveli district.

**Status :** Possibly extinct.



**25. Bulbophyllum aureum Hook.f.**

**Family :** Orchidaceae

**Description :** Epiphytic, small herbs. Pseudobulbs distant on a slender rhizome. Leaf 3.75cm, linear oblong, scape slender shorter than leaf. Umbel 2 flowered.

**Habitat :** Epiphytic in evergreen forests receiving high rainfall during south-west and north-east monsoons, in the altitudes of 1300-1800m.

**Distribution :** Muthukuzhivayal in Kanyakumari district. Narrowly endemic to Wynaad region of Western ghats.

**Status :** Possibly Extinct.

**26. Bulbophyllum elegantulum Rolfe.**

**Family :** Orchidaceae

**Description :** Epiphytic (rarely lithophytic) herbs with creeping stems. Pseudobulbs at intervals. Leaves 9.0 x 1.1cm, linear-oblong. Inflorescence an umbel, peduncle at the base of the pseudobulb. Flowers upto 6 in an umbel, pale-yellow with maroon stripes.

**Habitat :** In semi-evergreen forests at an altitudes of 1200 - 1450m receiving high rainfall. The soil is loamy.

**Distribution :** Kudini, Nilgiris in Tamilnadu. Endemic to western ghats.

**Status :** Vulnerable. Last collected from Nilgiris during 1972.

**27. Bulbophyllum kaitiense Wight.**

**Family :** Orchidaceae

**Description :** Epiphyte with slender rhizome.

Pseudobulbs ovoid. Leaves linear-oblong, 7-11 cm long, apex obtuse, emarginate. Scapes 5 to 10 cm long, shorter than leaves. Flowers pale greenish yellow tinged with pink.

**Habitat :** Epiphyte in moist deciduous forests.

**Distribution :** Nilgiris, Endemic in moist deciduous forests.

**Status :** Vulnerable

**28. Bunium nothum** Clarke.

**Family :** Apiaceae

**Description :** Herb, tuberous root. Leaves 5-8 cm long, ovate-triangular. Bract 3-6, linear-lanceolate. Bracteoles about 10. Pedicels 5-10. Fruit elliptic-oblong, glabrous, laterally compressed.

**Habitat :** With perennating tuberous roots. Probably in open places on hills above 2000m.

**Distribution :** Nilgiris. Endemic.

**Status :** Possibly Extinct. No collections after 1883.

**29. Campanula alphonsii Wall.**

**Family :** Campanulaceae

**Description :** Perennial herb, few branches 6-20cm tall, glabrous. Leaves alternate, sessile, elliptic. Size 5 x 2mm. Flowers blue to violet, solitary. Corolla lobed for half length. Capsules sub globose, dehiscing 3 basal pores.

**Habitat :** It occurs on hills of South India between 2050 - 2695m altitude.

**Distribution :** Nilgiris & Palani hills.

**Status :** Rare. This is an interesting case where after 1919 no collections were made till 1965 when V.V. Shetty recorded this species from Anamudi peak & further collections have been made during 1970 from Nilgiris.

**Value :** Horticultural



**30. Capparis diversifolia** Wight.

**Family :** Capparaceae

**Description :** A shrub with zigzag branches and recurved thorns, 2m tall. Leaves coriaceous often dimorphic linear-oblong or elliptic ovate 3 x 0.5cm (or) 6 x 3cm. Flowers showy reddish purple. Berry ovoid.

**Habitat :** Along dry scrubland or borders of deciduous forests, at low elevations in rocky soil.

**Distribution :** Tirunelveli district. This species was originally collected from Anamalais (1873) by Beddome and from Thanjore by Pierre (1861) but presently restricted to Tirunelveli.

**Status :** Vulnerable

**31. Capparis fusifera** Dunn.

**Family :** Capparaceae

**Description :** Shrub, 3m tall, 2 stipular thorns. Leaves elliptic-oblong 10 x 5cm, greenish yellow. Inflorescence umbel. Flowers odorous, greenish white. Petals sparsely tomentose. Fruit spindle shaped.

**Habitat :** In semi-evergreen and evergreen forests between 875-1000 m altitude.

**Distribution :** First collected in Anamalais, also reported from Tirunelveli district at Udumanparai. After a lapse of 100 years now rediscovered from Bonaccord Estate in Agastiamalai, Kerala. Subsequently collected from Silent Valley, Kerala.

**Status :** Rare

**Value :** Can be raised in Experimental gardens.

### **32. Capparis rheedii DC.**

**Family :** Capparaceae

**Description :** Erect shrub 2-4m tall. Branches pubescent, shoots with short spines. Leaves elliptic-ovate to lanceolate 10 x 5 cm. Flowers white, bluish tinged showy. Stamens over 80. Fruit oblong.

**Habitat :** At low elevations of 150 - 700 m in moderate to heavy rainfall areas of moist deciduous to evergreen forests; prefers laterite soil.

**Distribution :** Tirunelveli district

**Status :** Rare

**Value :** Horticulture

**33. Capparis shevaroyensis**

Sundararaghavan.

**Family :** Capparaceae

**Description :** Shrub 3m tall, branched and wiry, few thorns. Leaves glabrous, lanceolate 6-2 cm dull green above pale green below. Petiole 2.5mm. Flowers small, white, odorous. Stamens 20 to 30. Fruit globose, 8-10 mm in diameter.

**Habitat :** In moist forests from 400-800m, associated with *C. diversifolia*, *C. spinosa*.

**Distribution :** Ramanathapuram district & Tirunelveli district. Endemic.

**Status :** Vulnerable

**34. Carex christii Boeck.**

**Family :** Cyperaceae

**Description :** Stem 5-7 cm long, base slightly swollen and enclosed in sheaths, pale-ferruginous. Leaves short, 3mm broad. Inflorescence terminal spikelet, 12-13mm long, linear-oblong. Nut lenticular or trigonous.

**Habitat :** In mountainous regions at altitude 1524-2133m, on grassy slopes.

**Distribution :** Nilgiri hills. Endemic.

**Status :** Possibly Extinct

**35. Carex pseudoptera** Kuekenth.

**Family :** Cyperaceae

**Description :** Stems 25cm long, rhizome very small, rigid 2mm broad, revolute, spiklets 4-5, terminal, stigma 2 numbers. Female glumes, obtuse, brown, divaricate.

**Habitat :** At altitude 1828m, along grassy hill slopes.

**Distribution :** Nilgiri hills. Endemic.

**Status :** Possibly Extinct. Known only from the type collection.



**36. Carex vicinalis** Boott.

**Family :** Cyperaceae

**Description :** Stems 60cm, slender, angles acute, scabrous. Spiklets cylindric, 3-4 cm long. Dense flowered, lax at base. Bracts foliaceous. Female glumes elliptic, obtuse, dark purple. Stigmas 3.

**Habitat :** In the hilly regions.

**Distribution :** Nilgiri hills. Endemic.

**Status :** Possibly Extinct. Known only from the type collection.

**37. Cayratia pedata var. glabra Gamble.**

**Tamil Name :** Pannikkodi

**Family :** Vitaceae

**Description :** Large weak climbing shrub. Tendrills leaf-opposed. Leaves 5 to 7 foliate, glabrous, terminal leaflet 10 x 4 cm, ovate-lanceolate to elliptic. Inflorescence 10 cm long. Petals hooded at the apex.

**Habitat :** Occurs in tropical to subtropical evergreen forests between 800 - 2200m altitudes.

**Distribution :** Nilgiris. Endemic.

**Status :** Rare. After described by Gamble, recently located again in Nilgiris.

**Remarks :** Cayratia pedata has been reported in the flora of Tamilnadu carnatic by K.M. Mathew as being available in the plains and abundant in the hills.

**38. Cayratia roxburghii** Wight et Arn.

**Family :** Vitaceae

**Description :** Scandent shrub with smooth black shining bark. Branches glabrous. Tendrills leaf - opposed. Leaves trifoliate glabrous, terminal leaflet 12x5 cm, elliptic - lanceolate. Flowers bisexual. Petals hooded at apex. Disc fleshy, covering the ovary. Berries 2 to 4 seeded.

**Habitat :** Occurs in tropical evergreen forests between 750 - 1000 m.

**Distribution :** Tirunelveli district.

**Status :** Vulnerable. Confined to Courtallum. Recently collected from Agastiamalai, Kerala.

**39. Ceropegia barnesii** Bruce et  
Chatterjee.

**Family :** Asclepiadaceae

**Description :** Twiners with glabrous stems.

Leaves variable, 6-24 x 2-6 cm in size, ovate or oblong sparsely hairy above. Cymes few flowered. Corolla 3-4 cm long, tube upto 3 cm.

**Habitat :** It is known to occur in Wet Sholas and evergreen forests at about 2000m altitude.

**Distribution :** Nilgiris O' Valley.

**Status :** Endangered

**40. Ceropegia decaisneana Wight.**

**Family :** Asclepiadaceae

**Description :** Twiner with tuberous root. Leaves lanceolate, elongate. Sparsely hairy. Cymes 4-8 flowered with peduncles usually longer than the pedicels. Tube 4 cm long, purple spotted, base inflated, with a ring of hairs in the mouth. Follicles very slender.

**Habitat :** Seen to grow in open forest areas and in Sholas in evergreen forests over 1000m altitude.

**Distribution :** Anamalai and Nilgiris. Sispara ghat.

**Status :** Rare

**Value :** Horticultural

**41. Ceropegia fimbriifera** Bedd.

**Family :** Asclepiadaceae

**Description :** Erect herbs dippressed tuber. Stem Pubescent. Leaves linear, sessile. Cymes few - flowered, peduncles very short, pedicels longer. Corolla 4.5cm long, base slightly inflated, linear - clavate, glabrous above from ovate base.

**Habitat :** Seen to be growing on exposed areas on rocky beds among grasses, in the altitude of 1500 - 2000 m.

**Distribution :** Endemic to Tamilnadu, collected during 1980. Anamalais - Tunacadavu.

**Status :** Vulnerable. Tubers of almost all the species of *Ceropegia* are edible, rendering them threatened.



**42. Ceropegia maculata** Bedd.

**Family :** Asclepiadaceae

**Description :** Slender twiners, glabrous.  
Leaves ovate. Cymes few  
flowered. Corolla tube 1.5 cm  
long, ring of hairs at mouth.  
Follicles 10 cm long.

**Habitat :** In hilly areas at an altitude of  
1000m.

**Distribution :** Anamalais.

**Status :** Possibly extinct

**43. Ceropegia metziana** Miq.

**Family :** Asclepiadaceae

**Description :** Twiners. Oblong leaves with short adpressed hairs on the upper surface. Cymes few flowered. Peduncles hairy on one side. Corolla 4-7 cm long, base largely inflated, funnel shaped above.

**Habitat :** Occurs in evergreen forests along the Western Ghats on slopes between 1200-2000 m altitude.

**Distribution :** Palani and Nilgiris

**Status :** Possibly extinct

**44. Ceropegia omissa** Huber.

**Family :** Asclepiadaceae

**Description :** Glabrous twiners, lanceolate, acuminate leaves. Cymes few flowered. Corolla 2 to 3 cm long, base inflated, mouth slightly dilated, lobes 1 cm long, ovate. Outer corona of 5 bifid.

**Habitat :** It is known to occur in sholas and evergreen belts at higher altitudes in S.India and in moist low century.

**Distribution :** Courtallam, Sengaltheri in Tirunelveli district.

**Status :** Endangered

#### 45. *Ceropegia pusilla* Wight et Arn.

**Family :** Asclepiadaceae

**Description :** Small erect herb with  
depressed tuber, sessile leaves  
crowded. Cymes uniflorous.  
Corolla 2cm long, tube 1.5cm  
base inflated, pale in color  
with purple stripes. Follicle  
fusiform.

**Habitat :** Growing in rocky areas among  
grasses along the banks of  
streams/rivulets on hills at  
altitude of 2000m. Found also  
on grassy downs.

**Distribution :** Endemic to South India. Recent  
collection from Nilgiris and  
Mysore district.

**Status :** Rare

**46. Ceropegia spiralis Wight.**

**Family :** Asclepiadaceae

**Description :** Erect tuberous herb dippressed tuber, sessile grass-like leaves. Cymes uniflowered. Corolla 4 to 5 cm long, greenish yellow with purple stripes. Follicles slender about 12cm long.

**Habitat :** Seen to be growing at an altitude of 2500 m. Presumably, it grows on rocky gravelly habitat with moist and misty climate.

**Distribution :** Endemic to South India. Old collections from Nilgiri district in Tamilnadu, recent collection (1980) made from Kerala and Karnataka.

**Status :** Vulnerable

**47. *Ceropegia thwaitesii* Hook.**

**Family :** Asclepiadaceae

**Description :** Glabrous stout twiners with ovate to lanceolate leaves. Cymes few flowered. Corolla 5cm long with ring of hairs at the mouth, pale green with purple blotches, purple band across the lobe, white and green above. Follicles very long, slender, 30cm long. Seeds long.

**Habitat :** It is known to occur in sholas and evergreen belts at higher altitudes in S. India and in moist low century.

**Distribution :** Kodaikanal and Tirunelveli hills. Last collected in 1966.

**Status :** Vulnerable



**48. Chrysoglossum halbergii** Blatt.

**Family :** Orchidaceae

**Description :** Epiphyte, slender rhizome. Leaves 10x4 cm, solitary on pseudobulbs, 5 ribbed. Scape and raceme as long as the leaf, about 12 flowered; sheaths 3, bracts linear, flowers 1 cm in long. Sepals and petals obovate - lanceolate, acute, lip clawed.

**Habitat :** Epiphytic on the trees in dense evergreen forests at 1500 m altitude.

**Distribution :** Highway mountains of Madurai district. No recent collection.

**Status :** Possibly extinct

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**49. Cinnamomum gracile** Hook.f.

**Family :** Lauraceae

**Description :** Small straggling shrub with aromatic bark. Leaves elliptic. Flowers very small, axillary, glabrous. Stamens and ovary glabrous. Stamens minute, filaments very short. Fruit berry apparantly depressed globose.

**Habitat :** Found in evergreen forests at an altitude of 800 m.

**Distribution :** Endemic. During 1963 collected from Agastyamalai, Tirunelveli district in Tamilnadu.

**Status :** Rare

**50. Clematis theobromina** Dunn.

**Family :** Ranunculaceae

**Description :** Climbing shrub. Leaves opposite, trifoliate, margin serrate. Flowers in panicle, sepals velvety brown, petals absent. Fruit a head of achenes with long feathery styles.

**Habitat :** In evergreen forests from 1800 - 2400m.

**Distribution :** Endemic to Nilgiri, Coonoor, Korakundha, Naduvattum. Last collected in 1971 from Korakunda by Shetty.

**Status :** Rare

**51. *Cleome burmanni* Wight et Arn.**

**Family :** Capparaceae

**Description :** Annual erect herb upto 50 cm tall with scattered prickly appendages. Leaves as long as petiole. Leaflets 3 to 5 subsessile. Flowers white, solitary, 6-8 mm across. Stamens 6. Capsules linear. Seeds 10-15, reddish brown.

**Habitat :** Along roadsides, wastelands and cultivated fields.

**Distribution :** Ramanathapuram district, last collected from Shencottah (1914). No recent collections interesting that only earlier collection from Srilanka and Java are available.

**Status :** Possible extinct.

**52. Coelogyne mossiae** Rolfe.

**Family :** Orchidaceae

**Description :** Pseudobulbs ovoid, 5 x 2 cm.

Leaves 2 per pseudobulbs, oblong, elliptic, obtuse, 30x3 cm, racemes lateral to the pseudobulbs, 24cm long. Flowers white fragrant, 6-8 numbers; 4 cm across.

**Habitat :** Confined to the evergreen forests above 1500m altitude.

**Distribution :** Endemic to South Westernghats. First collected from Nilgiris and then from Upper Palanis.

**Status :** Vulnerable

**Value :** Horticulture

**53. Commelina hirsuta** Clarke.

**Family :** Commelinaceae

**Description :** Erect herb branched from base.

Leaves 5x1 cm linear. Peduncle of spathe slender 4 to 8cm long, spathes 1 to 2 per branch. Sepals 3 yellow, drying deep blue. Petals 3 one small, 2 clawed, blue. Capsule 3 celled. In open grassy hills.

**Habitat :** In open grassy hill slopes

**Distribution :** Endemic to Nilgiris (Avlanche) and Upper Palanis

**Status :** Rare



**54. Commelina indehiscens Barnes.**

**Family :** Commelinaceae

**Description :** Perennial herb, rootstock thick. Stems 200 cm long, rooting at nodes. Leaf sheath and internode reddish brown. Leaves 3 x 1 cm ovate. Cymes 1 to 3 flowered. Petals blue.

**Habitat :** Grows along the margins of evergreen forest and in open areas on humus covered soils and rocks, spreading to over 3m long.

**Distribution :** Endemic to western ghats, Tirunelveli and Theni District. No recent collections. This was cultivated in Experimental garden, Western Circle, Pune.

**Status :** Rare

**55. *Commelina tricolor* Barnes.**

**Family :** Commelinaceae

**Description :** Erect herb, branched from base  
50 cm height, root stock thick.  
Leaves 6x1 cm linear,  
lanceolate, glabrous spathe 2 to  
3 per branch. Sepals 3 unequal.  
Petals 3 unequal, 2 clawed.  
Capsule ovoid. Grows  
undershade of trees.

**Habitat :** Grows on humus covered forest  
floor under the shade of trees.

**Distribution :** Karadimalai in Gudalur, Nilgiris  
District. Last collected in 1963.

**Status :** Vulnerable

**56. Commelina wightii** Rollarao.

**Family :** Commelinaceae

**Description :** Slender branched spreading, rooting at nodes. Leaves small sessile, pubescent spathe 1-2 cm ovate. Flowers yellow.

**Habitat :** Grows on grassy hill slopes of Nilgiri hills, Palani hills of South India.

**Distribution :** Nilgiri & Upper Palanis. No recent collections.

**Status :** Possibly extinct

**57. *Corymborchis veratrifolia* Reinw.**

**Family :** Orchidaceae

**Description :** Terrestrial 1 - 2m tall, leafy herb, stem rigid, 1m high. Leaves 25 x 8 cm, elliptic lanceolate, sessile. Flowers greenish white fragrant, in 20 cm long panicles. Sepals and Petals linear - oblanceolate.

**Habitat :** In moist, shady places at 2000m altitude.

**Distribution :** Found in shady places in Nilgiris, Courtallum, Kannikatti in Tirunelveli District.

**Status :** Rare

**58. Cotoneaster buxifolius Wall.**

**Local name :** Hurunay

**Family :** Rosaceae

**Description :** Shrub 2 to 5m height, rigid, branched, ash grey tomentose hairs. Leaves 15 x 5 mm, dark green above tomentose beneath, elliptic ovate, acuminate. Inflorescence attractive 1-8 flowers per peduncle. Flowers 7 - 9 mm across. Petals white. Drupe glabose scarlet. Beddome says the hard tough wood is used by the Todas to make clubs and sticks.

Tallest growing and attractive evergreen shrub of cotoneaster. White flowers and Crimson red drupes, popular in gardens. Successfully grown in England for 150 years.

**Habitat :** This strictly evergreen species is restricted to higher altitudes between 1525 to 4040m around the type locality.

**Distribution :** Nilgiris and Upper Palanis

**Status :** Vulnerable

**59. Crotalaria clavata** Wight.

**Family :** Fabaceae

**Description :** Erect low herbs, branches arcuate. Leaves trifoliate, alternate, Stipules minute. Leaflets thick, upto 3cm long. Flowers yellow, numerous short peduncled racemes; Calyx Campanulate. Pods upto 2 cm long, minute silky Pubescent.

**Habitat :** Found in the hills upto 600 m

**Distribution :** Hilly areas in Coimbatore, Dindigul and Salem Districts. Endemic.

**Status :** Endangered

**60. *Crotalaria digitata* Hook.**

**Family :** Fabaceae

**Description :** Erect velvety shrubs. Leaves 5-7 foliolate, stipules subulate; Petioles long. Leaflets thick. Flowers 12-20, Yellow; bracts, lanceolate, Pods 5-7 cm long, cylindric.

**Habitat :** Found in hills upto 1900 m in semi-evergreen forests of western ghats.

**Distribution :** Kolli and Palani hills, Endemic to south India.

**Status :** Rare



**61. Crotalaria fysonii var. glabra****Gamble.****Family :** Fabaceae

**Description :** Perennial, Sparingly branched, prostrate glabrous herbs with woody rootstock. Leaves simple, subcoriaceous, 1-3.2 x 1.1-2 cm, ovate, apex acute, mucronate, base rounded, petioles 1-2 mm long, swollen, stipules 1-2mm long, linear lanceolate. Flowers bright yellow, bracts ovate. Corolla exerted. Pods brown 1.5 - 2.8 x 0.5 - 0.8 cm obovate oblong, cylindrical. Seeds brown.

**Habitat :** Found in hills upto 1900m in Semi ever green forests of Western Ghats.

**Distribution :** Endemic to Palani Hills in Dindigul District, Tamil Nadu.

**Status :** Endangered

**62. *Crotalaria globosa* Wight.**

**Family :** Fabaceae

**Description :** Prostrate, much branched, silky hairy herbs. Leaves simple, subsessile 0.9 - 1.5 x 0.7 - 1.3 cm, apex rounded, stipules 0. Flowers yellow in leaf opposed racemes. Pods brown. Seeds yellowish brown.

**Habitat :** In hills among grassy sunny slopes.

**Distribution :** Endemic to southern Peninsular India in Nilgiri, Dindigul & Courtallam, Chengapalli and Vedicola hills in Karnataka.

**Status :** Rare

**63. *Crotalaria kodaiensis* Debberm.**

**Family :** Fabaceae

**Description :** Much branched under shrubs, branches alternate, branchlets, opposite leaves, subcoriaceous, simple, subsessile 2.5 - 6 x 1.5 - 3.6 cm, broadly ovate, apex acute, petioles upto 3mm long, stipules nil. Inflorescence paniculate, bracts subcoriaceous, bracteoles 2, opposite. Persistent calyx companulate. Pods 2.5 - 3.5 cm long, oblong thick, fruiting pedicels upto 1 cm long, opposite. Seeds long, black.

**Habitat :** In hills upto 360 m

**Distribution :** Endemic to Kodaikanal hills.

**Status :** Endangered

**64. Crotalaria longipes** Wight.

**Family :** Fabaceae

**Description :** Undershrubs, branches stiff velvety. Leaves simple, alternate, 1.7 - 7.5 x 1.0 - 1.3 cm, obovate - oblong, apex obtuse, apiculate, base cuneate, petioles 3mm long, stipules nil. Flowers 2.5 cm across, yellow, pedicels alternate, bracts foliaceous bracteoles ovate. Calyx lobes not revolute. Corolla twice as long as calyx, sericeous. Pods stalked, 2 - 2.5 cm long, linear, oblong. Seeds 8 - 12.

**Habitat :** In hills.

**Distribution :** Endemic. Kolli and Nilgiri hills, Tamilnadu.

**Status :** Endangered

**65. Crotalaria peduncularis Grah.**

**Family :** Fabaceae

**Description :** Erect, undershrubs. Leaves simple, sub sessile; stipules absent. Flowers yellow. Peduncles with many bracts, bracts foliaceous, calyx lobes lanceolate. Corolla exserted. Pods stalked, blackish brown.

**Habitat :** In grasslands on hills

**Distribution :** Anamalai (Kadambarai) Palani, Nilgiri (Doddabetta) hills, Tamilnadu. Endemic.

**Status :** Rare

**66. *Crotalaria priestleyoides* Benth.**

**Family :** Fabaceae

**Description :** Brown - silky trailing herbs or undershrubs (black when dry). Leaves simple, alternate, subsessile, broadly obovate, apex obtuse, mucronate, stipules absent. Flowers yellow, 2-3, bracts foliaceous, lanceolate, long acuminate, bracteoles minute, sub apical on peduncle. Pods oblong, brown.

**Habitat :** In grasslands on exposed hill slopes upto 1500m.

**Distribution :** Anamalai and Nilgiri hills (Doddabetta) Tamilnadu; Bababudan hills Karnataka. Endemic.

**Status :** Rare

**67. *Crotalaria rigida* Heyne.**

**Family :** Fabaceae

**Description :** In coastal areas as undershrub. Branches many with spines. Leaves sub-sessile, thick 3 to 4 mm long, apex emarginate, glabrous above. Stipules minute. Flowers yellow in racemes. Pods small beaked.

**Habitat :** Mostly in coastal areas growing amongst coastal vegetation.

**Distribution :** Nagapattinam, Coimbatore and Tirunelveli districts.

**Status :** Rare



**68. *Crotalaria scabra* Gamble.**

**Family :** Fabaceae

**Description :** Erect, branched shrubs. Leaves sessile, simple, alternate, elliptic; stipules absent. Flowers 3-4 yellow, bracts and bracteoles 5-7 mm long, linear. Calyx lobes linear. Corolla slightly exserted. Pods shortly stalked, cylindrical.

**Habitat :** In hills upto 1900m

**Distribution :** Coimbatore, Kanyakumari, Salem and Tirunelveli (Agasthyarmalai peak) in Tamilnadu. Endemic.

**Status :** Rare

**69. Cyanotis cerifolia** RollaRao.

**Family :** Commelinaceae

**Description :** Stout spreading herb, rooting at nodes. Stem upto 1 cm in diameter. Leaf - sheaths 1 - 1.25 cm long; leaves sessile, alternate. Sepals 3, Petals 3. Stamens 6, filaments bearded. Capsules about 3mm long, 3 celled, each cell 2 seeded.

**Habitat :** This species grows amidst grasses in wet rocky areas.

**Distribution :** Endemic to Waverly Estate, Anamalai hills, Tamilnadu Westernghats

**Status :** Possibly Extinct

**70. *Cyathea nilgirensis* Holtt.**

**Family :** Cyatheaceae

**Description :** Endangered tree fern. Trunk 5m high, branches 40 cm long, dark brown, provided with spines upto 1.5mm long, scales on branches 15 x 1.5mm, dark brown margins fragile, narrow, glabrescent. Pinnae 60 cm long. Larger Pinnae 10-12 x 1.8-2.1 cm sessile costule 3-4 mm apart, veins 10 - 12 pairs, furcate, lamina segments small, margins crenate serrate. Sori indusiate near costules, indusium pale, small. Paraphyses small not longer than sporangia; a few crisped hairs present on costae.

**Habitat :** Along stream banks in shady humid forests.

**Distribution :** Nilgiris, Mountains of South India in between 1350 to 1800 m altitude.

**Status :** Endangered

**71. *Cycas circinalis* Linn.**

**Tamil name :** Kodi icham, Kattuthuvai.

**Family :** Cycadaceae

**Description :** An evergreen palm - like tree; trunk cylindrical. Bark tessellated above by small diamond - shaped, leaf - scars, brown; wood soft, yellowish; woody layer about twice as broad as bast tissue, woody layer consists of tracheids only; pores absent; tracheids have many small pits. Leaves 91 - 274 cm; rachis 45 - 61 cm; leaflets 80 - 100 pairs; male cone 30 - 61 cm; female cone 15 - 30.5 cm by 2.5 - 3.8 cm, ovate, lanceolate, margins pectinate; seeds 2.5 - 3.8 cm, orange red.

**Habitat :** Found in deciduous forests at an altitude of 1200 m.

**Distribution :** Endemic to the Western Ghats.

**Status :** Rare

**Value :** Seeds yield a valuable flour; sago is obtained from the pith of the trunk. Leaves ornamental.

**72. Cynometra travancorica** Bedd.

**Tamil name :** Mukkanji

**Family :** Fabaceae

**Description :** Tall trees 10 -15 m. Leaflets 1-paired, lanceolate, falcate, acuminate, unequal sided, very thin and creamy pink in colour when young. Flowers rosy - white, 4-merous. Ovary reddish. Pod flat, semicircular, rugose, orange when dry.

**Habitat :** In rocky forested hill slopes at 700 - 1000 m in evergreen forests.

**Distribution :** Western Ghats in South Travancore, Tirunelveli hills; Tambracheri Ghat Wynaad and also in Karnataka. Endemic

**Status :** Rare

**73. Decaschistia rufa Craib.**

**Tamil name :** Nir Paratthi

**Family :** Malvaceae

**Description :** A shrub upto 3m high, young branches with reddish tomentum. Leaves rounded, 3.5 - 7.5 x 4.0 - 7.2 cm base subcordate, apex shortly acuminate, acute, margin crenate-serrate. Stipules linear, single. Flowers solitary, yellow, epicalyx segments 10, connate at the base. Calyx campanulate. Petals 2.0 - 2.5 x 1.0 - 1.5 cm. Staminal column 1.2m long antheriferous throughout. Ovary ovoid.

**Habitat :** In dry areas

**Distribution :** Endemic to Peninsular India. It has not been reported after 1915. It was reported from Tiruvalluar and Kambakam Hill in Chingleput by Cleghorn and Ballipale of Cuddappah District by Gamble. After Gamble (1915) these areas have been surveyed in 1983, but this species has not been found.

**Status :** Possibly Extinct

**Value :** The stem bark is a good source of fibre.

**74. *Desmos viridiflorus* Bedd.**

**Family :** Annonaceae

**Description :** Gigantic climbers. Young shoots rufous. Leaves 8-13 x 3.5-4.5 cm, ovate - lanceolate, acuminate at apex, rounded, membranous. Flowers bright green solitary, axillary; pedicels, pubescent. Sepals 2 x 1.5 cm, ovate, subcordate at base. Outer petals 6.5 - 7.6 x 1.5 - 2.5 cm, inner petals a little shorter and narrower, all silky pubescent.

**Habitat :** This species grows in evergreen forests at an altitude of about 1000m.

**Distribution :** Anamalais in Coimbatore district, Tamil Nadu. Peermedu in Idukki District, Kerala. Endemic. The original material was collected by R.H. Beddome in 1871 from the Anamalais lastly observed in the same locality by C.A. Barber in the year 1903.

**Status :** Possibly Extinct



**75. *Dicranopteris linearis* var. *sebastiana***

Burm f.

**Family :** Dicranopteridaceae**Description :** This is a fern. Perennial terrestrial trailing herb. Lateral branch system is characteristic and forked several times. Branches at successive forks conspicuously, alternately unequal; tapering from base to apex, texture thin but firm, apex acute, lower surface glabrous and slightly glaucous, veins concolourous to lamina.**Habitat :** In hilly terrain at higher elevation (above 2000m) in partial shady forest clearings.**Distribution :** Hills of Kodaikanal, Madurai, Kotagiri, Nilgiris in Tamilnadu. Endemic to Tamilnadu. This has been collected during 1965 and there is no subsequent collection of this species either from the Nilgiris or Palanis.**Status :** Vulnerable

**76. Dictyospermum ovalifolium Wight.**

**Family :** Commelinaceae

**Description :** Erect, herbs upto 50cm high, rooting at lower nodes. Leaf sheaths persistent in the lower portion of stems. Leaves mostly at the tips of erect stems, broadly elliptic - lanceolate, base narrowed into petiole. Flowers in short terminal panicles of 4-8 cm, subsessile. Sepals 3. Petals 3. Stamens 3, fertile with unequal naked filaments. Seed yellowish.

**Habitat :** Grows along the margins of evergreen forests with other herbaceous plant in moist humus covered soils.

**Distribution :** Endemic to Western ghats from Konkan south wards to Thenmalai in Kerela. This species was first collected by Wight from the western slopes of the Nilgiri hills and was subsequently collected in several other places along the western ghats.

**Status :** Rare

**77. *Didymocarpus missionis* Wall.**

**Family :** Gesneriaceae

**Description :** Scapigerous herbs. Leaves upto 16 x 9 cm, ovate to ovate-lanceolate, succulent, entire, acute at apex, cordate, petioles upto 13 cm long, white hairy. Flowers 1.2 - 14 cm long, pale blue. Capsules 3 - 4 cm long, slender, glabrous.

**Habitat :** Dense evergreen forests often by riverside on wet rocks about 700 m.

**Distribution :** Kanyakumari District, Tamilnadu. Endemic to western ghats. The collections were made in 1832 & one more in 1874. After a lapse of 100 years this was relocated by Henry and Swaminathan in Kanyakumari district.

**Status :** Rare

**78. Dioscorea wightii** Hook. f.

**Family :** Dioscoreaceae

**Description :** Climbing herb with tuber.

Leaves ovate, acuminate, 7.5 cm long, 2.5 cm wide, base of the leaves cordate. Spike simple. Fruit loculicidal flattened.

**Habitat :** Found in evergreen forests at an altitude of 800 m.

**Distribution :** During 1963 located in Agastyamalai hills, Tirunelveli district, Tamilnadu.

**Status :** Rare

**79. *Dipcadi concanense* Baker.**

**Family :** Liliaceae

**Descripton :** Small 18 - 28 cm tall, bulbous, scapigerous herbs. Bulbs tunicated. Leaves small, linear. Scapes slender, glabrous, naked. Flowers shining white, 25 - 26 mm long, bisexual, hypogynous, gamophyllous. Stamens at the throat of the tube, filaments inconspicuous; anthers narrowly oblong. Ovary obovoid - oblong. Capsule deeply trilobed; seeds 6 in each locule, shining black.

**Habitat :** Sandy sea coasts.

**Distribution :** Endemic to South India.

**Status :** Possibly Extinct

**Value :** Alkaloid yielding plant

**80. Dipcadi minor** Hook. f.

**Family :** Liliaceae

**Description :** Herbs, 12 - 15 cm long, bulbous, scapigerous. Bulbs tunicated. Leaves linear, arising from the bulbs. Scape terate, glabrous. Flowers small, 8 - 9mm long, bisexual, hypogynous, gamophyllus. Stamens 6 at the throat of the tube, filaments very short, anthers oblong. Ovary narrowly obovoid.

**Habitat :** Sandy plateau

**Distribution:** Endemic to Deccan plateau. It has not been collected after 1959.

**Status :** Possibly Extinct

**Value :** Alkaloid yielding plant

**81. Diplazium travancoricum Bedd.**

**Family :** Athyriaceae

**Description :** Large fern about 1 - 1.5 m, rhizome erect, stipes 40 - 70 cm, tufted, scaly at base, scales narrowly lanceolate, margin toothed. Lamina bipinnate with 10 - 15 pairs, stalked, lanceolate, pinnules, sessile. Veins 15 - 20 pairs, forked. Sori displazioid. Spores reniform with a winged perispore.

**Habitat :** Along marshy places near stream in association with other species, under the shade of forests.

**Distribution :** South India and Sri Lanka.

**Status :** Rare



**82. Elaeocarpus blascoi** Weibel.

**Family :** Elaeocarpaceae

**Description :** Trees, 15 - 20m tall. Leaves 5 - 7.5 x 2 - 3 cm, ovate - elliptic, obtuse, base rounded, margin obscurely serrate. Inflorescence 4 - 6 cm long axillary, racemose. Flowers white. Pedicels 1 - 1.2 cm long. Sepals 5, 10 - 11 cm long, lanceolate, velvety at margin. Petals 5, 12mm long, laciniate, stamens 35. Ovary superior, ovoid. Drupes 1.5cm long, ellipsoid, rounded at ends.

**Habitat :** Fringe areas of moist evergreen forests in open places at an altitude of 2150 m

**Distribution :** Palani and Kodaikanal hills in Dindigul District, Tamilnadu. Endemic. There is no recent collection of this species since its type collection.

**Status :** Rare

**Value :** Timber value

**83. *Elaeocarpus munroii* Mast.**

**Tamil Name :** Pungari, Narebikki

**Family :** Elaeocarpaceae

**Description :** Trees, 40 - 50 m tall, a large tree with white or brown moderately hard wood. Leaves 5 - 10 x 2.5 - 4.5 cm, ovate, caudate - acuminate, base rounded, crenate - serrate, glabrous. Petioles 2.5 - 3.5 cm long. Flowers 1 - 1.5 cm across, white. Pedicels curving in fruits. Sepals 5, linear - lanceolate. Petals 5, elliptic - oblong, laciniate, silky hairy on both surfaces. Ovary superior, silky hairy. Drupes 1.5 - 2 cm long, elliptic or oblong, smooth. This species is being successfully raised in Coonoor range.

**Habitat :** Evergreen and Shola forests between 600 - 2000 m altitude.

**Distribution :** Nilgiri Sholas in Tamilnadu, Karnataka, Maharashtra. Endemic.

**Status :** Rare

**Value :** Timber value

**84. Elaeocarpus recurvatus** Corner.

**Local name :** Solabikki

**Family :** Elaeocarpaceae

**Description :** Trees, 30 - 40 m tall. Leaves 7.5 - 15 x 4 - 7 cm, oblong - ovate or elliptic, very convex, the two halves bent back so as to look like an inverted boat, acuminate or acute, base narrowed, matured leaves reddish in colour. Petioles 1.5 - 2.5 cm long, tomentose. Inflorescence 5 - 10 cm long. Flowers 1.5 - 1.8 cm across, white. Sepals 5, 1.5cm long. Petals 5, 1.5cm long, broader at apex laciniate. Stamens 20 - 30; filaments 1 mm long, puberulous. Ovary superior, elliptic or oblong ovoid, densely hairy. Drupes 1.5 - 1.8 cm long, ovoid or elliptic. Pyrenes 3- celled.

**Habitat :** Evergreen and Shola forests between 2000 - 2500 m.

**Distribution :** Kodaikanal in Tamilnadu. Endemic.

**Status :** Endangered

**Value :** Timber value

**85. *Elaeocarpus venustus* Bedd.**

**Tamil name :** Tamarai

**Family :** Elaeocarpaceae

**Description :** Large trees. Leaves 7.6 - 10.0 x 3.7 - 5.0 cm, coriaceous, elliptic or obovate, serrulate, glabrous. The leaves have large glands in the axils of the nerves beneath. Flowers white, fragrant. Sepals 2.0 - 2.5 cm. Stamens 30 - 40, anthers mucronate. Ovary 2-loculed with 6 ovules in each locule. Drupe 2.5 x 5.0 cm, ovoid.

**Habitat :** Evergreen forests in hills between 1000 - 1450m altitude.

**Distribution :** Endemic to southern W. ghat subsequent to Beddome's original (type) collection from Travancore, it was collected by Bourdillon from Muthukuzhivayal and Chimuniji in South Travancore. After a lapse of a few decades Henry recollected it from the type locality (Muthukuzhivayal) in 1976 and from the nearby Oothu - Kodayar area in Kanyakumari District in 1980.

**Status :** Vulnerable

**Value :** Horticulture

**86. Elaphoglossum beddomei Sledge.**

**Family :** Elaphoglossaceae

**Description :** This is a fern. Rhizome short, creeping, rigid, brown scales; scale 5 - 9mm long, apex acute. Fronds dimorphic. Phyllopodia 4 - 5mm long, inconspicuous, deep brown. Sterile frond, lamina coriaceous, linear, lanceolate, apex and base gradually narrowed, margin entire. Veins once or twice forked, prominent, hydathodes wanting. Sori acrostichoid.

**Habitat :** Lithophytes or epiphytes, grows in altitudes of 1000 - 2100 m.

**Distribution :** Nilgiri and Anamalai mountain in South India. Endemic.

**Status :** Rare

**87. Elaphoglossum nilgiricum** Krajina.

**Family :** Elaphoglossaceae

**Description :** This is a epiphytic fern. Rhizome short, densely covered with narrowly lanceolate or linear brown scales, scales acute at apex, margin with thin black teeth. Phyllopodia indistinct. Fronds crowded together and inserted all round the rhizome, stipes 2 - 6 m long, covered with woolly lanceolate scales. Lamina simple, oblong - elliptic, base cuneate or attenuate, apex abruptly narrowed; texture thin, upper surface green to brown, lower surface green, scale on both surfaces vary in shape, narrow to broad by lanceolate. Sori acrostichoid.

**Habitat :** Epiphytes on tree trunks at lower level or on moist rocks. Grows between 1500 - 1800 m in altitude.

**Distribution :** South India. Restricted to Nilgiri hills in Tamilnadu state. After a lapse of about hundred years, Vohra et al rediscovered the species in Silent valley, adjacent to Nilgiri hills. Endemic.

**Status :** Endangered



**88. Elaphoglossum stigmatolepis** Moore.

**Family :** Elaphoglossaceae

**Description :** This is a fern. Rhizome horizontally long creeping, rigid, ovate - lanceolate, bicolorous ; scales brown at base, margins entire. Phyllopodia distinct, swollen, black, narrowed ; lamina narrowly elliptical, broad, black on drying cartilaginous, acuminate, costa scaly beneath; veins evident, once or twice forked, hydathodes wanting, sori acrostichoid.

**Habitat :** Grows on rocks or on trees in shady, moist conditions in between 2000 - 2500m altitudes in cool shady forests.

**Distribution :** Endemic to South India. Described from the Nilgiri Hills. Beddome reported it from the Nilgiri and Palani hills. Last collection of it was made by J. Ellis in 1972.

**Status :** Vulnerable



**89. *Euonymus angulatus* Wight.****Common****name :** Spindle tree, Vini.**Family :** Celastraceae

**Description :** Small trees; branchlets acutely 4-angled, glabrous. Leaves upto 8-12 x 4-8 cm, oblong - lanceolate to ovate - lanceolate, entire, thickened at margins, very coriaceous, glabrous, base tapering, veins not conspicuous. Flower dull purple colour, more than 7 together in lax cymes. Stamens 5. Ovary sunk on the disc, thick. Fruits capsular, turbinate, apex obtusely winged.

**Habitat :** Grows in evergreen forests along hill slopes and river banks.

**Distribution :** It is reported from Nilgiris and Bolampatti hills of Coimbatore. Endemic to Southern peninsular India.

**Status :** Endangered

**90. Euonymus serratifolius** Bedd.**Common**

**name :** Spindle tree

**Family :** Celastraceae

**Description :** Small shrubs; branchlets terete. Leaves 8.5 - 10.5 x 2 - 4cm, lanceolate, glabrous, coriaceous, serrate, apex tapering; petioles 8mm long; flowers 3-7 together, in axillary cymes. Sepals 5, orbicular, imbricate, petals 5, orbicular. Stamens 5, inserted on the fleshy disc. Ovary sunk in the disc; styles short thick. Fruits capsular, globose, valves obcordate; seed 1-2, arillate.

**Habitat :** Recorded from slopes of Western Ghats at an altitude above 900m

**Distribution :** Located from Anamalais and Nilgiri Hills, Tamilnadu. Endemic. Beddome collected it from Nilgiris in 1864. It has not been collected and reported afterwards.

**Status :** Possibly Extinct.

**91. *Eragrostis rottleri* Stapf.**

**Family :** Poaceae

**Description :** This is a grass. Annual herbs.

Culms viscid below the panicle.

Leaves 2.5 - 20cm, flat or more or less convolute. Panicles 5 - 15

cm, oblong, open, branches filiform to capillary, solitary.

Spiklets 4-5 mm, linear, pale-brown, 6-12 flowered,

stamens 3, anthers 0.25mm; grains 0.4mm.

**Habitat :** Coastal Plains

**Distribution :** On the east coast at Tranquebar, South India.

**Status :** Possibly Extinct

**92. Eriochrysis rangacharii** Fischer.

**Family :** Poaceae

**Description :** Tufted perennial; culms erect and wiry 3 noded, nodes softly villous. Leafsheaths tight, sulcate; ligule short, rounded, leaf blades very narrow. Panicle narrow. Racemes 3-4, sessile upto 3cm long; spikelets binate. Sessile spikelets narrowly lanceolate, surrounded by rufous hairs. Lodicules 2. Stamens 3; anthers linear, 2.7 mm long, reddish brown, stigmas plumose. Lodicules, stamens and pistils similar to those in sessile spikelet.

**Habitat :** It is a tufted perennial grass growing in hilly areas at 1800 m.

**Distribution :** Paikara in Nilgiri district, Tamilnadu. Endemic. It was collected only once in 1900 from a single area at about 1800m.

**Status :** Possibly Extinct

**93. Eriolaena lushingtonii Dunn.**

**Tamil name :** Uduppai, Thuthi.

**Family :** Sterculiaceae

**Description :** Deciduous trees, 5m tall; branchlets pubescent. Leaves orbicular, acute at apex, base cordate, irregularly short dentate, membranous. Flowers 2cm long; bracteoles 0.5cm long, multifid, caducous; calyx 5 partite, 2 cm long; petals 5, yellow, obovate; staminal column with numerous anthers; ovary sessile; style simple; stigma 5 fid. Capsules 4cm long, ovoid, woody; seeds numerous.

**Habitat :** The species is found growing in moist deciduous forest tracts in the hills at lower elevations.

**Distribution :** Endemic to the Southern E. Ghats in Peninsular India. Its type collection was made by Lushington from the Nallamalai hills in Kurnool District of A.P. Subsequently after a lapse of about seventy years Ellis collected it from Chelama in July 1963, and from the adjacent locality Rollapenta in 1972, in the Nallamalais. It was also located further South at Srivilliputhur Reserve Forest in Ramanathapuram District of Tamilnadu in July 1965.

**Status :** Vulnerable

**94. *Eugenia discifera* Gamble.**

**Family :** Myrtaceae

**Description :** Trees 7-10m high; trunk 30-50cm across; branchlets terete, glabrous. Leaves 5-6 x 2.0 - 3.5cm, orbicular - obovate or obovate; abruptly acuminate at apex, attenuate at base, recurved, pellucid - dotted; petiole 3-10 mm long; flowers white, axillary, in pairs; petals orbicular, pellucid - punctate; staminal disc conspicuous. Berries 12 x 8mm, subglobose.

**Habitat :** Seen in the evergreen forests of Western Ghats in altitudes between 1300 - 1400m.

**Distribution :** South India; known from two areas viz: Chimunji, Trivandrum District, Kerala and Sethur hills, Kamarajar district, Tamilnadu. Endemic. This species discovered in 1895 could not be relocated till now. But after a lapse of 85 years it was rediscovered in Sethur hills, where it was found to be rare. K.S. Neelakantan and Dr. S. Paulraj have located this species above Nagariar Estate in Rajapalayam Range.

**Status :** Endangered



**95. *Eugenia singampattiana* Bedd.**

**Family :** Myrtaceae

**Description :** Small trees; branchlets terete. Leaves 7 - 10 x 3 - 4 cm, ovate or elliptic - oblong, acute or acuminate at apex, cordate, pale beneath; nerves and intramarginal nerves prominent, petiole short. Flowers white, in short terminal racemes; bracts and bracteoles pubescent. Calyx tube 3mm long; petals nerved, in conspicuously dotted.

**Habitat :** The original gathering has been made from the evergreen forests of Western Ghats at 1000 m.

**Distribution :** South India, endemic to Tirunelveli district, Tamilnadu. Beddome had two collections - one from Singampatti hills and the other from Papanasam hills of which the latter is available in MH. The only known collection is by Beddome made between 1864 - 74. As per BSI Red data book this species has never been collected again during the last 110 years. This species has been located and specimens collected during 1998 by Dr. V.S. Ramachandran, Dept. of Botany, Kongunadu Arts & Science College, Coimbatore. This species has been collected near Banatheertham, Karayar Catchment area.

**Status**

Endangered



**96. *Glycosmis macrocarpa* Wight.**

**Family :** Rutaceae

**Description :** Erect unarmed shrubs; branchlets almost glabrous. Leaves 3-5 foliate; leaflets, alternate, 12x14 cm, oblong or elliptic - lanceolate, margin entire, glabrous, pellucid glands filled with essential oil. Flowers small. Sepals 4, broad, imbricate, Petals 4. Stamens free; ovary 4 loculed. Berries 1.2 - 2.2 cm in diameter, subglobose, smooth.

**Habitat :** The species occurs as an undergrowth in evergreen forests in the hills and has been recorded upto 750m altitude.

**Distribution :** At present it is restricted to the Southern W. Ghats (Kerala and Tamilnadu) in Peninsular India. It was also reported from Sri Lanka. The species is believed to be confined to the Southern W. Ghats where it has been recorded from Cannanore, Palghat and Tirunelveli districts.

**Status :** Rare

**97. Goniothalamus rhynchantherus**

Dunn.

**Tamil Name :** Pulithal**Family :** Annonaceae

**Description :** Trees upto 20m tall. Bark blackish. Leaves 5.3 x 16.5 x 1.7 - 6.6 cm, oblong - lanceolate, nerves forming intra-marginal loops. Flowers solitary, light yellow. Sepals 3, each 8 x 8 mm. Outer petals 12 x 5.5mm thick, flat. Stamens many; anthers beaked. Carpels many.

**Habitat :** In dense forests from 500 - 1600 m.

**Distribution :** Courtallam, Papanasam hills, Kannikatti and Walayar Estate area in Tirunelveli district, Tamilnadu and near Bonaccord Estate in Trivandrum district, Kerala. An endemic species restricted to the Southern end of the Western Ghats in evergreen forests, scattered in few localities. Of late, a few trees were observed near Bonaccord and Walayar Estates.

**Status :** Rare

**98. *Gymnema montanum* Hook.**

**Family :** Asclepiadaceae

**Description :** This is a creeper with opposite leaves. Flowers small in cymes and pale yellow in colour. Corolla campanulate staminal column arising from the base of the corolla. Anthers erect. Ovary of 2 carpels. Fruit follicular mericarps. Seeds ovate.

**Habitat :** Western Ghats of Shola forests at an altitude of 1200 - 2000 m.

**Distribution :** Endemic in Nilgiri hills and Anamalai hills.

**Status :** Endangered

**99. Habenaria barnesii** Summerh.

**Family :** Orchidaceae

**Description :** Slender tuberous herbs, 10 - 2 cm tall. Leaves 2 or 3, scattered from the middle; lanceolate - oblong, acute 3.5 - 6 x 1-3 cm. Flowers 1-3 in racemes, 2cm across, greenish - yellow. Lip trilobed upto the base; lobes linear, 1mm broad, spur 1.5cm long, shorter than the ovary and pedicel.

**Habitat :** In open grasslands on wet rocky areas in the altitude range of 1500 to 2000m.

**Distribution :** Peninsular India; endemic to the Southern Western Ghats. Reported from Gudalur, Nilgiri district in Tamilnadu.

**Status :** Rare

**100. Hedyotis albonervia** Bedd.

**Family :** Rubiaceae

**Description :** A herb, woody at base; stem glabrous, pinkish in colour. Leaves opposite, petiolate, 9 - 11 x 2 - 2.5 cm, lanceolate, acuminate, submembranous, pale green in colour, glabrous; nerves 6 pairs; petiole 1 - 1.5 cm long; stipules interpetiolar, free, 2 - 3.5 x 7 - 10 mm long, ovate, pectinate with long glabrous teeth, black glandular at the tip. Flowers 5 - 6 mm long, epigynous, heterostylous. Calyx 4, erect, glabrous. Corolla white, tubular. Stamens 4. Capsule globose, glabrous. Seeds few to many, testa reticulate, brownish.

**Habitat :** On forest floor at about 200m in altitude.

**Distribution :** Endemic. Tirunelveli district, Tamilnadu.

**Status :** Endangered

**101. Hedyotis barberi Gamble**

**Family :** Rubiaceae

**Description :** Small undershrubs with woody ringed branches; branches rough and corrugated with stipular scars. Leaves sub-sessile 1 - 1.5 x 0.6 - 0.7 cm, ovate, coriaceous, pale brown in colour; stipules opposite, glandular at margin, whitish. Flowers short pedicelled, 7 - 9 mm long, heterostylous. Corolla tubular, 3 - 4 mm long, pubescent at throat. Stamens 4, exserted. Ovary small, ovoid. Fruit capsular, 2.5 - 3.5 x 1 - 2 mm, ovoid, glabrous. Seeds few, planoconvex or angular, reticulate.

**Habitat :** In forests at about 1500m altitude.

**Distribution :** Endemic. Western Ghats, Agastiamalai in Tirunelveli district.

**Status :** Vulnerable

**102. Hedyotis buxifolia** Bedd.

**Family :** Rubiaceae

**Description :** Herbs or undershrubs; stems stiff, glabrous. Leaves opposite, sessile or subsessile, 1 - 1.5 x 0.5 - 0.7 cm, ovate or elliptic, coriaceous; stipules interpetiolar, connate at base with 6 - 7 teeth. Inflorescence cymose, 3 - flowered. Flowers sessile, 9 - 10 mm long, bracteate, epigynous, heterostylous. Corolla pale / violet, tube 2 - 3 mm long, densely pubescent inside. Capsule sessile, subglobose, glabrous. Seeds many, small, angular, reticulate.

**Habitat :** On hill slopes at about 2600 m altitude.

**Distribution :** Endemic. Higher ranges of the Anamalais

**Status :** Rare



**103. Hedyotis cyanantha Kurz.**

**Family :** Rubiaceae

**Description :** Herbs with stout rootstock, branching from base, branches erect; stem terete, stiff, setaceous throughout. Leaves opposite or verticillate, sessile, 1 - 1.5 x 0.2 cm, linear, coriaceous, rigid. Flowers sessile or shortly pedicelled, 4-5mm long; pedicel 0.5 - 1 mm long, setaceous. Capsule globose or ovoid, 2 - 4 x 1.5 - 2 mm, subcoriaceous, ribbed, with persistent calyx teeth. Seeds 40 - 60 angular, narrowly winged, reticulate.

**Habitat :** On rocky slopes or in open deciduous forest floors.

**Distribution :** Tamilnadu, Maharashtra and Karnataka; Sri Lanka.

**Status :** Rare

**104. Hedyotis eualata** Bedd.

**Family :** Rubiaceae

**Description :** A weak shrub, branching, rooting at lower nodes; stems obtusely angular, grooved, glabrous. Leaves large, subsessile or petiolate, 3-17 x 1.5 - 4.5 cm, ovate or elliptic - lanceolate or oblong - lanceolate, pale green, glossy below. Flowers pedicelled, 7 - 8 mm long, bracteate, bracteolate; bracts foliaceous; bracteoles linear, minute. Capsule globose or subglobose, depressed, glabrous. Seeds 8-20, angular or plano - convex, minute, brownish.

**Habitat :** On forest floor at about 1400m altitude.

**Distribution :** Endemic. Western Ghats, Anamalais, hills of Tirunelveli district and Pykara falls in Nilgiri district.

**Status :** Rare

**105. *Hedyotis hirsutissima* Bedd.**

**Family :** Rubiaceae

**Description :** A shrub with stout stem

cm long, branches are  
with stipular scars.

opposite, sessile or

petioled, 1-5 x 0.8 - 2.5cm

coriaceous, densely yellow

hirsute hairy; nerves 3-4

hirsute; petiole 1-2mm

hirsute; stipules interpetiolar

deeply pectinate. Flowers

lilac, pedicelled, 18-20

long, bracteate, hirsute; bracts

foliaceous; pedicel 1-2mm long

Capsule globose, 2-3 x

2.3mm, hirsute. Seeds few

angular, narrowly winged

brownish in colour. This

species is characterised by long

and stiff hairs i.e. hirsute.

**Habitat :** Hilly region in the Nilgiris.

**Distribution :** Endemic. Found in Nilgiris  
which is now a Biosphere  
Reserve.

**Status :** Possibly Extinct.

**106. Hedyotis ramarowii** Gamble.

**Family :** Rubiaceae

**Description :** An undershrub with rather thick soft stems. Leaves opposite, petiolate, 8-12 x 3-4 cm, lanceolate, membranous, puberulous, parallel nerved; stipules interpetiolar, 2-3 x 3.5 mm, triangular, whitish, with 4-6 bristles, puberulous. Flowers pedicelled, epigynous, 6-7 mm long, puberulous; bracts linear, 1-2 mm long. Capsule ovoid or ellipsoid, 8-10 ribbed, 2 - 2.8 mm long, glabrescent; crown angular. Seeds 20 - 24, angular, narrowly winged, reticulate, brownish or blackish.

**Habitat :** Grows in evergreen forest floors.

**Distribution :** Endemic. Kannikatti in Tirunelveli district.

**Status :** Vulnerable

**107. Hedyotis swersioides** Hook. f.

**Family :** Rubiaceae

**Description :** A low shrub, branches short, with stipular scars at short intervals, glabrous but minutely pubescent along grooves near nodes. Leaves opposite, sessile or subsessile, 2.5 - 7 x 1 - 2 cm, elliptic-ovate, acute, contracted at petiole, coriaceous, undulate at margin, yellowish when dry; nerves 3- 4 pairs from base; petiole upto 3mm long, stipules interpetiolar, free, elongating with pectinate teeth, glabrous, black glandular at tip. Flowers pedicellate, epigynous, heterostylous, 7 - 8 mm long; bracts small, linear, lilac or white. Capsules globose, 3- 4 x 1 - 2mm, hispid. Seeds many, minute, angular, winged, testa reticulate.

**Habitat :** On forested hill slopes at 1500-2000 m in altitude.

**Distribution :** Endemic. Western Ghats, on the downs of the Palani hills.

**Status :** Rare



**108. Hedyotis travancorica** Bedd.

**Family :** Rubiaceae

**Description :** A small undershrub. Leaves small 2.5cm long, elliptic, acuminate, main nerve obscure, simple, opposite. Flowers solitary, axillary on slender pedicels, stipules rounded.

**Habitat :** Found in evergreen forests at an altitude of 1000m in humus soil.

**Distribution :** Endemic. During 1963 located in Agastyamalai, Tirunelveli district, Tamilnadu.

**Status :** Rare

**109. Helichrysum perlanigerum Gamble.**

**Family :** Asteraceae

**Description :** Undershrubs, 1.0 - 1.5m high, covered with very soft spreading floccose wool. Basal leaves in rosettes upto 15cm long, sessile, 5 - ribbed; ribs not impressed. Leaves on stems 4 - 9 x 1.0 - 2.5 cm, sessile, lanceolate, acute, margins recurved. Heads many, 7mm across, crowded in terminal corymbs, upto 20cm across, yellow. Achenes obovoid, scaly with uniseriate pappus hair black.

**Habitat :** In the high altitude grasslands especially near the streams.

**Distribution :** Endemic to Southern Western Ghats at Anamalai hills of Tamilnadu in the high altitudes between 1900 - 2000 m. It was reported by J.S. Gamble based on the collection of R.H. Beddome probably around the year 1857 from Anamalai hills of Coimbatore district at an altitude of about 2000m. By intense search, this plant was relocated at high elevations at Konalar - Thanakamalai of Anamalai hills in the year 1980.

**Status :** Rare



**110. Hildegardia populifolia Roxb.**

**Local name :** Delibuda

**Family :** Sterculiaceae

**Description :** Deciduous tree, 20 mts. height. Branchlets warty. Leaves cordate, 7 x 8 cm. Basally 7 nerved, thin - coriaceous, apex acuminate. Flowers scarlet. Follicles 3 - 5 lobed.

**Habitat :** Found in deciduous forests.

**Distribution :** Endemic Eastern slopes of South Arcot Kalrayans. About 20 trees are existing and also in Chengalput district a few trees have been located. Apart from this no further population has been recorded so far in Tamilnadu. This species is available in Andhra Pradesh. Seedlings have been raised in Kalrayans.

**Status :** Endangered.

### 113. **Humboldtia bourdillonii** Prain.

**Family :** Fabaceae

**Description :** Moderate - sized trees upto 16m tall ; trunk 35 - 45 cm in diameter. Leaves 6 - 8 foliolate, leaflets 7.5 - 12 x 1.5 - 4 cm, linear to narrowly ovate, unequal at base, chartaceous, glabrous; stipules ovate, acute, glabrous, appendages falcate, rounded, veined, persistent. Flowers 7mm long, pinkish; pedicels 1.4 - 1.7 cm long, brown velvety; petals 5, white with pink veins, 3 longer and 2 shorter. Stamens 5, broad at base, pilose. Pods 10 - 11 x 2.5 cm, dolabriform, velvety brown pubescent, bright red or crimson, 3 - 5 seeded; sutures thick, valves prominently veined. Mature seeds not seen.

**Habitat :** An evergreen tree along the banks of stream at altitude varying from 800 - 850 m.

**Distribution :** Ghats of Peermade and Courtallam in Kerala and Tamilnadu respectively. Endemic. It has not been collected after the two collections made in the years 1894 and 1907.

**Status :** Endangered

**Value :** The pods are eaten by hill tribals and are probably rich in proteins. Ornamental tree.

**114. Hybanthus travancoricus** Bedd.

(Ionidium travancoricum)

**Family :** Violaceae

**Description :** Small shrubs. Leaves alternate. Flowers solitary, axillary and pink in colour. Sepals 5, subequal. Petals 5, the lower one on a long claw, spurred at the base. Anthers connate, ovary ovoid, style clavate, stigma oblique. Capsule 3-valved.

**Habitat :** Semi evergreen forests along streams at an altitude of 800 m.

**Distribution :** Endemic. Located along streams in Agastyamalai, Tirunelveli district during 1963.

**Status :** Rare

**115. *Hydnocarpus macrocarpa* ssp. *macrocarpa* Bedd.**

**Tamil :** Vellainangu

**Family :** Flacourtiaceae

**Description :** Large evergreen trees, 10 - 15m tall. Leaves alternate, 20.5 - 30.0 x 7.5 - 10.0 cm, oblong, entire, glossy and dark above, pale beneath. Flowers white, 2.5 cm across, in axillary fascicles or clustered on old stems. Sepals 4, imbricate. Petals 12 - 16, shorter than sepals, ciliate, scales 3 - lobed. Stamens numerous, serrate. Berries globose, 12.5 - 15.0 cm in diameter, woody with hard rind, dark brown. Seeds many.

**Habitat :** The species is found growing in dense evergreen hill forests and has been recorded between 500 - 900 m altitude.

**Distribution :** Endemic to the Southern W. Ghats in peninsular India. The earliest few collection are those of Lawson and Bourdillon from Travancore (Kerala). Since Bourdillon last collected it from Merchison Estate near Ponmudi (Travancore) in 1895, it was not known to have been collected until 1979 when Henry located it between Balamore and Muthukuzhivayal in Kanyakumari district of Tamilnadu.

**Status :** Endangered

**116. *Hydrocotyle conferta* Wt.**

**Family :** Apiaceae

**Description :** A prostrate, villous herb, rooting at nodes. Leaves simple, long petioled, orbicular - reniform, 2 - 6 x 2.5 - 5 cm, crenate, setulose, umbels simple, axillary and leaf-opposed, sessile or very shortly peduncled, 5 to 15 flowered. Fruits sub-orbicular 1 x 2.5mm, laterally subcompressed, whitish, smooth or obscurely punctate, ribs slender, vittae absent.

**Habitat :** A prostrate herb on sunny open wet hill slopes and along forest margins at about 2000 m altitude.

**Distribution :** Endemic to the Nilgiri and Palani mountain of the peninsular India.

**Status :** Rare



**117. *Hypericum japonicum* Thunb. var.****major** Fyson**Family :** Hypericaceae

**Description :** Shrub. Leaves opposite, marked with black dots, exstipulate, sessile, auricled, 3-nerved. Flowers solitary, axillary, white-red. Sepals and petals 5 each. Stamens monadelphous. Ovary 1-celled. Fruit capsule.

**Habitat :** It is found in grasslands at an altitude of 1500 m.

**Distribution :** Endemic. Western downs of Nilgiris, Tamilnadu.

**Status :** Rare

**118. *Ilex gardneriana* Wight.**

**Family :** Aquifoliaceae

**Description :** Trees or shrubs. Leaves 5 - 7.5 x 2 - 2.5 cm, ovate-lanceolate, rounded at base, entire, subcoriaceous, glabrous, midvein slightly impressed; petioles 5 - 6 cm long. Flowers solitary or in paniced umbellules, pedicillate; peduncle 1.2cm long. Female flowers unknown. Male flowers 0.3 cm across. Sepals 5, ciliolate, Petals 5, oblong, obtuse, connate below. Stamens inserted on petals. Fruit not known.

**Habitat :** Evergreen forest patches or sholas in the hills at 1800 m altitude and above.

**Distribution :** Endemic to the Nilgiri hills in the Southern Western Ghats of Peninsular India. It was recorded from Sispara Ghat in the Nilgiris.

**Status :** Possibly Extinct



**119. *Impatiens acaulis* Arm.**

**Family :** Balsaminaceae

**Description :** Perennial herb. Leaves simp

Flowers irregular, solitary, pa

pink colour. Sepals 3. Petals

Ovary 5 - celled, oblong

Capsule short or long. Seed

smooth.

**Habitat :** Found in moist forests in high elevations, at an altitude of upto 2500m.

**Distribution :** Endemic. Western Ghats in Nilgiris.

**Status :** Endangered

**120. *Impatiens laticornis* C.E.C. Fischer.**

**Family :** Balsaminaceae

**Description :** Perennial herb. Leaves simple, thick, erect, suborbicular, base cordate, pilose above. Flower axillary, sepals 3-5, coloured imbricate, basal lobe of wing petals above half as long as the other 2. Stamens 5. Ovary 5. Seeds smooth.

**Habitat :** Found on wet rocks in deep shade at an altitude of 2800m.

**Distribution :** Endemic. Kundhas in Nilgiris.

**Status :** Possibly extinct.

**121. *Impatiens neo-barnesii* Fischer.**

**Family :** Balsaminaceae

**Description :** Delicate bulbous herbs, acaulescent, pendulous. Leaves 1 - 2 per plant, ovate or elliptic - ovate, 2 - 8 x 1.3 - 3.6 cm, acute, unequal sided, rarely denticulate at margins, membranous; petiole 2 - 4 cm long, delicate, glabrous. Flowers 2 - 2.5 cm long, white with yellowish wings, sepals 5 mm long ; petals delicate. Capsules 8 mm long, ellipsoid, acute.

**Habitat :** Epiphytic herb growing in wet sholas on moss covered tree trunks with pendulous leaves and flowers. Recorded from Kundas at an altitude of 2300 m and from Devabetta at an altitude of 2250 m from the Nilgiri hills.

**Distribution :** Endemic to the Nilgiri Hills in the Western Ghats of Tamilnadu. Reported only from the Nilgiri hills, Tamilnadu in 1931 by E. Barnes and subsequently in 1970 by J.L. Ellis

**Status :** Endangered

**122. *Impatiens nilagirica* Fischer.**

**Family :** Balsaminaceae

**Description :** Erect, acaulescent herb, bulbs small, globose. Leaves 1-2, radical, fleshy, suborbicular, 2.5 - 4 cm across, cordate at base; distinctly apiculate - crenate; primary nerves 7 - 9; petioles 3 - 9 cm long, purplish. Flowers purplish; sepals 4 mm long, ovate - falcate, obtuse, slightly cordate at base, vexillum 1 cm long, subacute, spur short, broadly obtuse. Capsules 1 - 2 cm long, ellipsoid, seeds ovate - oblong, minute, compressed, glabrous.

**Habitat :** Terrestrial herb growing among grasses and on rocks, at an altitude of about 2800 m in the Nilgiri hills.

**Distribution :** Nilgiri hills in the Western Ghats of Tamilnadu. Known only from the Nilgiri district, Tamilnadu. E. Barnes collected it from the Nilgiris in 1931. It has not been collected or reported afterwards from anywhere. Endemic.

**Status :** Endangered

### 123. *Indigofera barberi* Gamble.

**Family :** Fabaceae

**Description :** Suffruticose shrub, 20 - 120 cm tall; branches scabrous. Leaves pinnately trifoliate; petioles 1.5 - 2.5 cm long, canaliculate, adpressed pubescent; stipules 1 - 2 mm long, subulate, pubescent without; leaflets 2.5 - 5.5 x 1 - 2.5 cm, obovate, mucronate. Flowers solomon red; pedicels 1 mm long, bracts 2 - 2.5 mm long, subulate, pubescent, glandular, caducous; calyx 2mm long; teeth narrowly triangular. Pods 1.5 - 2 cm long, subcylindric, moniliform, curved towards tip, pubescent and glandular, sutures thick. Seeds 2 - 4, 1.5 x 1mm, ovoid, smooth, reddish brown or yellow.

**Habitat :** In open areas among other legumes and grasses at altitudes varying from 300 - 700 m. Deep rooted in rocky soils along the hill slopes.

**Distribution :** Endemic to Eastern Ghats in Andhra Pradesh and Tamilnadu. It was described based on gatherings of C.A. Barber from hills of South Arcot District and those of Bourne from Shevroy hills.

**Status :** Rare



**124. *Indotristicha tirunelveliana* Sharma.****Family :** Podostemaceae**Description :** Aquatic herbs, rhizomes 5 - 25 cm long, suberect, sparingly branched below, attached by long hepterae only at base. Leafy shoots simple, numerous, densely crowded, completely covering the upper surface of the rhizome. Leaves 1.5 x 0.8 mm, sessile, simple, arranged in 4 vertical rows, ovate to lanceolate, entire. Flower bearing leafy shoots often branched below; the upper few, linear. Flowers solitary, terminal, regular, bisexual, hypogynous, monochlamydeous, pedicellate, reddish. Capsules 2 - 3 mm long, ellipsoid, 9 - ribbed, dehiscing into 3 valves; seeds ellipsoid, minute, smooth.**Habitat :** Aquatic herb, recorded from Thulukkamparai, Tirukkurungudi, Tirunelveli district growing on rocks in running streams, at an altitude of about 850 m.**Distribution :** Southern Western Ghats (Tirunelveli hills) in Tamilnadu. Collected by Karthikeyan in 1972. It has not been collected or reported afterwards from the type locality or elsewhere.**Status :** Rare

**125. Kalanchoe olivacea Dalz.**

**Family :** Crassulaceae

**Description :** Erect succulent olive brown herbs upto 30 cm high, glabrous except the inflorescence. Leaves fleshy, 8.5 - 12.5 x 2.5 - 5.0 cm, ovate, elliptic or broadly lanceolate, base cuneate, irregularly crenate, serrate, dotted with blood-red spots. Flowers white or pale-pink in supra-axillary paniculate cymes; hypogynous scales white, glands situated behind each ovary at the base. Follicles membranous, glabrous. Seeds numerous.

**Habitat :** Among rocks and under cliffs at 1200 - 1700 m altitude.

**Distribution :** Attakati and Kadamparai in Anamalai hills, Coimbatore district, Tamilnadu. Endemic.

**Status :** Rare



**126. Kendrickia walkeri** Hook .f.

**Family :** Melastomataceae

**Description :** Ornamental epiphytic ivy-like climbing shrubs. Leaves opposite, fleshy, 2.5 - 5.5. cm long, oblong or obovate, obtuse. Flowers fleshy, large, red, in few-flowered terminal umbels, bracteoles 2. Capsules globose. Seeds numerous, minute, prismatic.

**Habitat :** Epiphytic in evergreen forests at 912 - 1520 m altitudes.

**Distribution :** Anamalai hills, Coimbatore district, Tamilnadu; it is of doubtful occurrence in Sri Lanka. Gamble (1919) described it as one of the most beautiful plants tinging the forest with red when in bloom, but it could not be recollected since then even after the intensive surveys in the area.

**Status :** Possibly Extinct

**Value :** Ornamental value

**127. Kingiodendron pinnatum Harms.**

**Tamil name :** Madayan samprani

**Family :** Fabaceae

**Description :** Evergreen trees, upto ~~300~~ m tall; trunk 1-2 m in diameter; branchlets terete, lenticellate, glabrous. Leaves 12-22 cm long, imparipinnate, alternate, pulvinate; Inflorescence 10-12 cm long, finely puberulous; flowers small, calyx 5 lobed, white. Petals absent. Pods brownish, 4.0-4.5 x 2.2-2.7 x 0.8 - 1.0 cm, ellipsoid, abruptly short beaked, lenticellate, 1- seeded. Seeds brown, ellipsoid, flattened, regulose, hard.

**Habitat :** Slopes of hills in evergreen forests between 200-1000 m altitudes. Soils are loamy and rich in humus.

**Distribution :** Endemic to Southern Western Ghats in Karnataka, Tamilnadu and Kerala. Scattered in a few localities but restricted to the evergreen forests on the slopes of Southern Western Ghats. Although sporadic collections were made from different localities of Southern Western Ghats since 1804, its recent collections are made from a very few localities of Karnataka (Coorg and Hassan districts) and Tamilnadu (Kanniyakumari and Tirunelveli districts.)

**Status :** Rare

**Value :** Wood dark red or reddish brown with a sticky resin, used for planking and furniture. The resin, like Copaiba balsam, is of value.

**128. *Lepidagathis barberi* Gamble.**

**Family :** Acanthaceae

**Description :** Much branched erect small herbs, 30 - 70 cm high, branches white. Leaves 1 - 2 x 0.5 - 1 cm, opposite, ovate - oblong with 3 short spinous teeth on either side and one terminal. Spikes axillary, 1.5 x 1 cm, binate or ternate, villous; bracts closely adpressed, ovate, shortly spinous - mucronate, softly hairy; capsules compressed, oblong, 2 - seeded.

**Habitat :** On dry sandy gravelly terrains of wastelands and scrub jungles.

**Distribution :** Endemic to Southern peninsular India in Western and Southern Carnatic, plains of Coimbatore, Madurai and Ramnad and Tirunelveli districts. There are only 4 herbarium specimens collected from Ramnad and Tirunelveli districts, Tamilnadu. No recent collection of this species could be made through the above districts have been well explored.

**Status :** Possibly Extinct.

## 129. *Lepidagathis diffusa* Clarke.

**Family :** Acanthaceae

**Description :** A low straggling shrublet from a woody root - stock. Branches 5 - 30 cm long, many, prostrate nearly glabrous. Leaves 3 x cm, sessile, linear or elliptic entire, acute or mucronate. Spikes 1 - 2 cm long, dense hairy, axillary; bracts 1 cm long lanceolate, acuminate spinescent; calyx 4 - partite corolla white or pink, dotted with brown or purple spots. Capsules ovoid, glabrous, seeded.

**Habitat :** On dry open gravelly terrain in plains and scrub jungles.

**Distribution :** Peninsular India in parts of Deccan, Western Karnataka, Mysore, Bellary and Coimbatore. Endemic.

**Status :** Possibly Extinct.



### 130. *Lindsaea malabarica* Bedd.

**Family :** Lindsaeaceae

**Description :** This is a fern. Rhizome slender, short, creeping, brownish. Stipes stramineous, pale brown. Lamina simply pinnate or bipinnate with one or two pairs of lateral pinnae. Pinnules 20-30 to a side, the upper one closer, ascending, lower ones spreading. Veins immersed, once or twice forked. Sori interrupted; indusium pale-green, rigid, entire or crenate.

**Habitat :** Terrestrial in moist humus soil in shady places along the banks of streams.

**Distribution :** South India, endemic to Western Ghats. The report of it from Burma by Christensen and Dickson, according to Kramer is probably an error and the specimen (Ghatak 440 Madras) available at Kew Herbarium seems to be from some hilly areas of erstwhile Madras State (Tamilnadu). Beddome reported this species from the Western Ghats. Recently it has been collected from Silent Valley Reserve Forest, Palghat district, Kerala after a lapse of 120 years.

**Status :** Endangered

**Value :** Horticulture

**131. *Liparis biloba* Wight.**

**Family :** Orchidaceae

**Description :** Small pseudobulbous herbs. Fresh shoots lateral from the old pseudobulb, 7.0 - 9.5 cm tall with inflorescence. Leaves membranous, ovate - elliptic. Racemes terminal, 3 - 5 cm long. Flowers purple, few, more or less dense. Dorsal sepal oblong - lanceolate. Lateral petals linear, obtuse.

**Habitat :** A small, pseudobulbous herb in grassy slopes at an altitude of 2225m and also nestling among moss on the branches of trees. The area is often blanketed in thick fog and receives heavy rainfall.

**Distribution :** Tamilnadu, Nilgiris, Kollimund. Endemic to Nilgiris. It has been collected from Nilgiris in 1972.

**Status :** Vulnerable

**132. Mackenzia caudata** Ramam.

**Family :** Acanthaceae

**Description :** Erect shrubs, 1-2m. Leaves lanceolate, long caudate - acuminate; main nerves 10 - 12 pairs. Flowers in heads; single or 1-3 together, very villous with small involucral bracts; bracts linear - oblong; bracteoles narrow. Corolla tube cylindric.

**Habitat :** Grows in shady moist evergreen forests in the altitudes of 1000 - 1500 m.

**Distribution :** Endemic to hills of South Canara, Coorg, Wynaad - Nilgiri hills and Travancore in the South Western Ghats, South India.

**Status :** Rare



**133. Mahonia leschenaultii Takeda.**

**Tamil name:** Mullu kadambu, Marunthu.

**Family :** Nymphaeaceae

**Description :** A shrub with stiff, erect, corky-barked stems. Leaves pinnate with opposite leaflets. Leaflets lanceolate prickly, flowers yellow in long erect racemes. Berries globose, purple in colour.

**Habitat :** In Shola forest of Western Ghats at an altitude of 2200 m and above.

**Distribution :** Endemic in Nilgiris.

**Status :** Endangered

**134. Melicope indica** Wight.

**Family :** Rutaceae

**Description :** Large shrubs. Leaves opposite, 1 - foliolate, pellucid - punctate; leaflets elliptic or obovate, margin entire; petiole 1.2 - 5.3 cm long, leaves have glands with essential oil. Cymes 3 - 5 flowered, axillary; peduncles 6 - 8 cm long. Flower 4 - merous. Fruit with 3- cocci, coriaceous, dehiscing on the innerface; seeds oblong, black, shining.

**Habitat :** This is a montane species found in evergreen forest patches or Sholas in the Nilgiri hills, between 1800 and 2275m altitudes.

**Distribution :** Endemic to the Nilgiri hills Tamilnadu in peninsular India. This narrow endemic species has been recorded from a few localities like Avalanche, Bangitapal, Kundha, Lakkadi, Mudimund and Sispara, all in the Nilgiris. It was collected from some of these localities viz. Avalanche, Lakkadi, Carrott Shola - Mudimund, Sispara during the plant surveys of 1970 - 72. The last known collections was made by Vivekananthan from Avalanche in the year 1972.

**Status :** Vulnerable.

**135. Memecylon flavescens** Gamble.

**Family :** Melastomataceae

**Description :** Large shrubs or small trees. Leaves small, elliptic or elliptic - obovate, nerves obscure; petioles very short. Flowers pale blue, sessile or subsessile in fascicles on axillary or lateral tubercles. Berries greyish.

**Habitat :** In evergreen shola forests at about 2400 m.

**Distribution :** Endemic to Kundha and Avalanche, Nilgiris in Tamilnadu. After the type collection in 1889, it was recollected only once in 1972. Since then it has not been found even after repeated surveys of the area.

**Status :** Endangered

**136. Memecylon sisparens** Gamble.

**Family :** Melastomataceae

**Description :** Large shrubs or small trees.

Leaves sub-sessile, upto 9 cm long, ovate - oblong, base rounded or slightly cordate, nerves 5 - paired, conspicuous. Flower petals blue, calyx red, fascicled, singly or in very short peduncled cymes on lateral tubercles or rarely axillary.

**Habitat :** In evergreen forests at about 1700 m.

**Distribution :** Sispara, Nilgiri hills in Tamilnadu. Endemic.

**Status :** Possibly Extinct.

**137. *Microtropis densiflora* Wt.**

**Family :** Celastraceae

**Description :** A tree. Leaves 8 cm long, opposite, entire, exstipulate. Flowers cymes, peduncles short. Petals 5. Stamens 5. Ovary 2 to 3 celled, style short. Fruit capsule, narrowly oblong, 2 cm long.

**Habitat :** Found in dense evergreen forests at an altitude of 2500 m.

**Distribution :** Endemic. Sispara at Nilgiris and also collected at Pykara during 1971.

**Status :** Rare.

**138. *Miliusa nilagirica* Bedd.**

**Family :** Annonaceae

**Description :** Large shrubs with glabrous branches. Leaves linear - lanceolate or elliptic, pointed at both ends, coriaceous, glabrous; petioles 2 - 6 mm long. Peduncles axillary glabrous. Sepals & outer petals subequal, ciliate. Stamens 8, 1 - seriate. Ovaries glabrous; ovules 1 - 2. Carpels pisiform, glabrous.

**Habitat :** In hill forests (Sholas / Evergreen forests) in the altitudes 1500 m and above.

**Distribution :** Endemic to Southern India: Western Ghats in Wynaad, Nilgiris and Anamalai hills, Tamilnadu, at 1600 m.

**Status :** Vulnerable



**139. *Murdannia juncoides* Wight.**

**Family :** Commelinaceae

**Description :** A perennial herb with thick bulbous root-stock, 10 - 20 mm high. First formed leaves 10 - 15 cm, filiform, narrowly linear or subulate, semiterete; flowering scapes leafy, with smaller leaves. Panicle branched, terminal, capillary, few-flowered; bracts minute, ochreate, persistent. Sepals 3, free, reddish - brown; petals 3, rosy - purple, free. Capsules subglobose, smooth, shiny, 3-celled, cells 5 - 8 seeded each. Seeds minute, angular, smooth.

**Habitat :** This species grows in most rock crevices and wet turfs.

**Distribution :** Endemic to Southern portion of Western Ghats especially in Thenmalai and adjoining hill ranges. First collected by Robert Wight from Courtallum in August 1835. This species collected from the type locality where a very few population were observed in 1962 by M.P. Nayar and A.R.K. Sastri

**Status :** Rare



**140. *Murdannia lanceolata* Wight.**

**Family :** Commelinaceae

**Description :** Small, slender, erect, tufted herb, 10 - 20 cm high, branched from the base. Roots fibrous. Leaves sessile, 3 - 6 x 3 - 5 cm; linear to linear - lanceolate. Panicle terminal, dichotomously branched, slender, flexuous. Sepals 3, subequal, reddish - brown; petals 3, free, blue; stamens 6. Capsule 2 - 3 mm long, linear, oblong, trigonous, 3 - equal celled, each cell 10 - 15 seeded. Seeds minutely tessellate.

**Habitat :** This species grows in cultivated fields and in moist areas amidst grasses.

**Distribution :** Endemic to low hills of Kerala and Tamilnadu. Koenig collected the species from Red hills near Madras. Subsequently, this species was collected only once from Singampatty valley (92m) Tirunelveli District, Tamilnadu.

**Status :** Vulnerable

**141. *Neuracanthus neesianus* Wight.**

**Family :** Acanthaceae

**Description :** An undershrub; stems procumbent, terete, subteragonous when young, softly hairy. Leaves 2.2 - 5 x 0.6 - 2.5 cm, sessile, ovate, velvety on both surfaces, entire. Flowers very small in terminal, simple, 2.5 - 5 cm long spikes; bracteoles small, subulate. Capsules upto 8 mm long, oblong, 4 - seeded; seeds compressed, hairy.

**Habitat :** On black cotton soil.

**Distribution :** India, Tamilnadu, North Arcot District : Polur. Endemic.

**Status :** Possibly Extinct.

## 142. *Nothopegia aureo-fulva* Bedd.

**Family :** Anacardiaceae

**Description :** Small trees with rufous - villous branchlets. Leaves 8.5 - 23.0 x 1.2 - 3.5 cm, sub-opposite, linear - oblong or oblong - lanceolate, gradually long acuminate - obtuse; nerves parallel, 20 - 30 pairs, slender, arched; petioles stout; 5 - 10 mm long, very shaggy rufous - villous. Racemes very short. Flowers tetramerous. Petals glabrous. Stamens 4 with villous filaments.

**Habitat :** Hill forests of South Western Ghats.

**Distribution :** Endemic to South India. Courtallum in Tirunelveli hills.

**Status :** Endanger

**143. Ochreinauclea missionis Wall.**

**Family :** Rubiaceae

**Description :** A tree. Leaves 10 - 16 x 3.5 - 5.2 cm, oblong - elliptic. Base decurrent, membranous, glabrous, shining above; petioles upto 1.2 cm long, rounded. Stipules interpetiolar, deltoid, connate, persistent. Flowers in terminal globose heads, heads 3 - 4.5 cm across; peduncles stout, solitary; calyx tube 2 mm long; lobes hairy. Corolla yellow; stigma fusiform. Fruits connate fleshy; seeds arillate, irregularly flattened, testa black.

**Habitat :** Found growing in evergreen forest areas, particularly along the banks of rivers. It has been recorded between 600 - 2000 m altitudes.

**Distribution :** Endemic to central and Southern W. Ghats of peninsular India. The species was located at Kanapathiankadu, Kanyakumari district in Tamilnadu during the plant surveys of 1979 - 80.

**Status :** Vulnerable

**144. Ophiorrhiza brunonis** Wight.

**Family :** Rubiaceae

**Description :** Herbs or undershrubs, upto 50 cm tall, with erect branching stem, glabrous. Leaves opposite, 3-15 x 1.5 - 6.5 cm, ovate or elliptic - ovate, glabrous, petioles glabrous; stipules opposite, entire, subulate. Flowers bracteate, bracteolate, pedicellate, epigynous, gamopetalous, 6.5 - 12 mm long, white or lilac, bracts and bracteoles persistent, linear, puberulous; calyx obovoid. Corolla funnel shaped. Capsules bilocular, glabrous. Seeds minute, irregularly angular.

**Habitat :** Grows on damp, shady places or in rocky slopes at 930 - 2150 m in altitude.

**Distribution :** Tamilnadu, Kerala and Karnataka. Endemic to Nilgiri hills. It has not been collected after 1952.

**Status :** Possibly Extinct.



**145. Ophiorrhiza pykarensis** Gamble.

**Family :** Rubiaceae

**Description :** Herbs or undershrubs, 25 - 40 cm tall, branching, pubescent. Leaves opposite, ovate, petiole 0.5 - 2 cm long, slender; stipules falling off soon. Flowers bracteate, bracteolate, pedicellate, epigynous gamopetalous, pale blue; bracts and bracteoles caducous, minute. Calyx obovoid. Corolla funnel shaped. Disk 1mm high; stigma 2 lobed. Capsule 2 - lobed.

**Habitat :** Along slopes of forested mountains at 2000 - 2500 m altitude.

**Distribution :** Nilgiri hills. Endemic. After its original discovery it has been collected only once in 1935.

**Status :** Possibly Extinct.

**146. Orophea uniflora** Hook.f.

**Family :** Annonaceae

**Description :** Small trees, 5 - 7 m, glabrous.

Leaves ovate, acute. Flowers pale - yellow with pinkish base inside. Petals 6, in 2 whorls, outer ovate, inner clawed. Stamens 12. Fruits globose.

**Habitat :** The species grows in forest slopes of the Ghats upto 1200 m in evergreen forests.

**Distribution :** **Karnatak :** Coorg; **Kerala :** Wynaad; **Tamilnadu :** Tirunelveli. Endemic to Western Ghats in Southern peninsular region.

**Status :** Rare



**147. Palaquium bourdillonii** Brar

**Tamil name :** Kat illupei, Palvadir

**Family :** Sapotaceae

**Description :** Small trees. Leaves

at the apices of branch

- 17.5 - x 3.5 - 6 cm,

elliptic or elliptic,

cuneate. Flowers solit

few - flowered axillar

corolla 5.5 - 6.0 mm l

spathulate - oblong.

x 13.0 cm, ovoid,

single - seeded.

**Habitat :** Evergreen forests at  
altitude.

**Distribution :** Endemic to Southern

The species is b

Bourdillon's collectio

from Kulathupuz

Strathmore Estate,

district, in April 1895.

other known collection

of Beddome from Tir

hills. This species is rep

be relocated in this dis

**Status :**

Possibly Extinct.

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**148. Paphiodilum druryi** Bedd.

**Family :** Orchidaceae

**Description :** Perennial herbs, rhizomes upto 1m long, stout, stems purplish; leaves strap shaped, 20 - 30 x 3 - 5 cm, glossy green. Flowers solitary, 7.5 cm across, yellow - green to golden yellow, with purple stripes; upper sepals broadly ovate with a broad median band and hairy margins; lateral petals spreading or slightly drooping; lip slipper like, finely reddish - purple spotted.

**Habitat :** In sunny forest floors amidst grasses, sedgets etc., and is often found in close association with *Aerides maculosum*.

**Distribution :** Travancore and Kalakkad hills in South - Western Ghats in Kerala. In the subsequent years, the species has been collected only from Kalakkad hills. Endemic to very limited areas. The species was originally collected by Col. Drury in 1865 from Travancore hills and later collected by R.H. Beddome from Kalakkad hills in 1875.

**Status :** Possibly Extinct.

**Value :** Horticulture

**149. Pavetta hohenackeri** Brem.

**Tamil name :** Pavattai

**Family :** Rubiaceae

**Description :** Erect shrubs, much branched, stem stout, terete, glabrous. Leaves petiolate, opposite, decussate, narrowly obovate or oblanceolate, membranous, glabrous. Flowers 15 - 30, pedicellate, 4 - merous; pedicel 5 - 12 mm, slender, glabrous. Calyx tube 0.7 - 1.0 x 1.0 mm, obovate, glabrous; corolla tube 14 - 15 mm long, pubescent within, ovary 1.0 x 1.0 mm; disk 0.8 x 1.0 mm, annular; style 20 - 31 mm, slender; stigma 2.2mm, clavate, puberulous.

**Habitat :** In the evergreen forests.

**Distribution :** Peninsular India. Tamilnadu : Nilgiri, Sispara. Endemic.

**Status :** Vulnerable.

**150. Pavetta wightii** Hook.f.

**Tamil name :** Pavattai

**Family :** Rubiaceae

**Description :** Shrubs, branched; stem terete, glabrous; bark brown when old. Leaves petiolate, opposite, decussate, elliptic, coriaceous; petioles 0.7 - 1.5 cm, glabrous; stipules persistent. Inflorescence terminal shortly pendunculate, trichotomously branched corymbose cymes. Flowers 70 - 80; pedicellate, 4-merous; calyx tube 1.0 x 1.5 mm, obovate; corolla tube 12 - 13 mm long; pubescent within; ovary 1.0 x 1.0 mm; disk 0.5 x 1.0 mm, annular; style 30 - 31 mm, slender, glabrous within; stigma 1.5 mm, clavate, puberulous.

**Habitat :** In the sholas of the valleys of the Nilgiris at about 1200 m in altitude.

**Distribution :** Tamilnadu : Nilgiri Hills, Coonoor. Endemic. After the original collection by R. Wight in 1848, it was collected probably from the type locality by C.E.C. Fischer in 1910.

**Status :** Possibly Extinct.

**151. *Peucedanum anamallayense* Clarke.**

**Family :** Apiaceae

**Description :** Perennial, glabrous herbs, 0.5 - 1.5 m tall, herb with fistular fluted stems. Leaves 2 - 4 pinnate, segments linear - lanceolate, umbels compound, divaricate; pedicels in fruits 4 - 8 mm long; bracts 0 or 1 - 4; style long. Mericarps orbicular, dorsal and intermediate ridges scarcely excurrent, lateral with a prominent wing as thick as the seed, vittae 4-6, large.

**Habitat :** In hilly forests, in cool, shaded forest floor.

**Distribution :** Anamalai hills, Coimbatore district, Madurai, Tamilnadu. Endemic.

**Status :** Rare



**152. Pimpinella pulneyensis** Gamble.

**Family :** Apiaceae

**Description :** 30 - 60 cm tall, erect, glabrous to pubescent herbs. Basal leaves with petioles upto 32 cm long, simple, orbicular. Umbels long peduncled, terminal or leaf - opposed. Bracts absent. Bracteoles 3 - 5, linear. Pedicels 8 - 10 x 3 - 4mm, pubescent. Petals white with involute apex. Fruits ovate, narrowed upwards, slender, glabrous.

**Habitat :** In damp cool places in the sholas.

**Distribution :** S. India; endemic in the pulney mountains. The place from where (Kodaikanal) the species was reported is well explored and inspite of that no other collections except by Bourne made in 1878 and in 1891 are available in the herbaria. Henry et al and Vajravelu are of opinion that this species is presumably in danger of extinction.

**Status :** Possibly Extinct.



**153. *Piper barberi* Gamble.**

**Tamil name :** Kattu milagu

**Family :** Piperaceae

**Description :** Scandent undershrubs with swollen nodes. Leaves 7-14.5 x 0.9-4.5cm, elliptic - lanceolate, pale and minutely punctate below, pinnately nerved; stipules 5-10mm long, lanceolate, caducous. Male-flowers. Stamens 2; anthers 2-locular. Female flowers. Ovary 1-locular, obovoid, ovule solitary; style absent. Berries 4mm across, obovoid.

**Habitat :** Evergreen forests between 500 - 1000 m altitude.

**Distribution :** Endemic to a very narrow range in the Southern W. Ghats. The original type collection was made by Barber from Kannikatti in May 1901. Subsequently it could only be collected from the type locality "after a lapse of over six decades". Later Henry located it at Kilaviarumalai, Balamore in Kanyakumari district in 1976.

**Status :** Rare

**Value :** The Southern W. Ghats region is probably the centre of origin of black pepper (*p. nigrum*). This species is a wild relative of the cultivated pepper. Evaluation of the genetic potential of this species for improving the present cultivated variety is necessary.

**154. *Plectranthus bishopianus* Gamble.**

**Family :** Lamiaceae

**Description :** Erect undershrubs; stems more or less succulent, branched, 4-angled, glabrous. Leaves 4 - 8 x 2 - 6 cm, ovate, base rounded or slightly cuneate, nerves 5 - 6 pairs, pubescent; petiole 2.4 - 4 cm long. Flowers in slender, thyrsoid panicles; bracts ovate, caducous; calyx 6mm long bilabiate, hairy; corolla 1.5 cm long, bell - shaped, lilac, puberulous; sub-obtuse; stamens 4 didynamous, slightly exserted; style slender, subequally bifid at the apex.

**Habitat :** Undershrub in 'Shola' forest at about 2300m altitude.

**Distribution :** Endemic to Palani hills, Kodaikanal in Tamilnadu. The species is so far known only from its type collections from Pillarrock made by A.G. Bourne from Palani hills in 1899 and 1901.

**Status :** Possibly Extinct

**155. *Plectranthus bourneae* Gamble.**

**Family :** Lamiaceae

**Description :** Succulent undershrubs; stems thick, angled, pubescent. Leaves 2.5 - 5.0 x 2 - 4 cm, orbicular or ovate, margin upper side crenate or dentate, lower entire, nerves 4 - 6 pairs, petiole thick, 5 - 15 mm long. Flowers in 2 - 4 cm long racemes; calyx bilipped, villous, upper lip entire, lower 4-toothed, subequal, teeth subulate or lanceolate. Nutlets 4, dry, black or brown, smooth.

**Habitat :** Along streams, in ravines and under rocks at an altitude of 2000 m.

**Distribution :** The species was first collected by J.S. Gamble (1883) from Coonoor in Nilgiri hills, but not known to have been collected thereafter from these hills. However A.G. Bournae collected it from Palani hills during 1897 to 1901.

**Status :** Possibly Extinct.

**156. Podocarpus wallichiana Presl.**

**Tamil name :** Niramballi, Naruthambi

**Family :** Coniferae. Only member of the family in S. India.

**Description :** A tall evergreen glabrous tree. Bark smooth, mottled brown and white, wood grey, medium hard, aromatic. Leaves opposite or subopposite, coriaceous, lanceolate, tapering at both ends, 7.5 - 17 cm long, 2 - 5 cm wide. Longitudinal nerves numerous. Petiole short, flat. Flowers 0.85 cm in Pedunculate clusters, female flowers solitary.

**Habitat :** Evergreen forests at an altitude of 1000 m. This species is found in less areas than originally found.

**Distribution :** Western Ghats from Nilgiris southwards.

**Status :** Rare

**Value :** Timber

**157. Poeciloneuron pauciflorum** Bedd.

**Tamil name :** Puthangkolli

**Family :** Bonnetiaceae

**Description :** A large evergreen tree with a reddish wood, 15 - 20 m tall. Leaves 12.5 - 15 x 2.5 x 2.7 cm, lanceolate or linear - oblong, margins entire, coriaceous, secondary veins closely arranged, parallel; with fine reticulation in between; petioles 0.8 cm long, minutely hairy. Flowers solitary, axillary, yellowish - white. Sepals 4, unequal. Petals 6, imbricate. Stamens numerous. Ovary 2 - loculed, 2 ovules in each locule; styles 2, subulate. Capsule 2.5 x 1.2 cm, ovoid, 1-seeded, coriaceous.

**Habitat :** The species was recorded from the evergreen forests on the hills. It has been recorded between 600-1500 m in altitude.

**Distribution :** Endemic to 'Travancore' and Tirunelveli hills of Southern W. Ghats in Peninsular India. Only 2 separate gatherings are known. The earliest collection (of Beddome) are from Travancore Ghat. Gamble reported it from Tirunelveli hills, but this could not be confirmed by the recent plant surveys.

**Status :** Possibly Extinct.

**Value :** Timber



**158. Pogostemon atropurpureus Benth.**

**Family :** Lamiaceae

**Description :** Erect undershrubs; stems branched, terete, woody, pubescent. Leaves 6-8 x 2-3 cm, ovate, margin doubly crenate, pubescent; petioles 2-4 cm long, pubescent. Spikes 20 x 2.0-2.5 cm, bracts and bracteoles minute, setaceous; calyx 4-6 mm long, tubular; teeth triangular, ciliate; corolla dark purple, tube slender, exserted; stamens 4, exserted; filaments glabrous; stigmatic lobes slender.

**Habitat :** In moist forest floor at an altitude of 2000 m.

**Distribution :** Endemic to Southern Western Ghats in peninsular India. Beddome collected this species in 1859 from peninsular India. In 1883 J.S. Gamble collected it from Sispara of Nilgiri hills. M.A. Lawson collected the same species in 1883 and 1887 from the same locality. It was also reported from Coonoor, Nilgiri hills. No report of its existence was recorded thereafter from these hills. But after a lapse of eight decades; B.V. Shetty located it from Umaiynamalai and Anaimudi Sholas of Kottayam district in 1966 and 1970 respectively.

**Status :** Rare



**159. *Pogostemon nilagiricus* Gamble.**

**Family :** Lamiaceae

**Description :** Herbaceous plants with woolly white hairs on the stem. Leaves 4 - 5 x 2.5 - 3.0 cm, ovate, base rounded, margin crenate, pubescent; petiole 7 - 12 mm long, pubescent. Spikes 7 - 12 x 1.0 - 1.5 cm, the whorls of clusters close; bracts linear or lanceolate; bracteoles linear; calyx 6 - 7 mm long, tubular, bilobiate ; teeth equal, lanceolate; corolla white, 6 mm long, bilipped; stamens 4 exerted, subequal; stigmatic lobes subulate. Nutlets 4, ovoid, smooth.

**Habitat :** On the outskirts of woods, and in neglected, broken ground on Nilgiri hills at about 2000m altitude.

**Distribution :** Endemic to Nilgiri hills of Western Ghats. It was first collected by Robert Wight and was again collected by A.G. Bourne in 1908 and P.F. Fyson. It was last collected in 1923 by J.S. Gamble from the same hills.

**Status :** Endangered

**160. Pogostemon paludosus Benth.**

**Family :** Lamiaceae

**Description :** Erect herbs. Stems branched, glabrate. Leaves 4 - 6 x 3 - 4 cm, ovate, rounded or slightly cuneate at base, margin crenate; petioles 1 - 1.5 cm, slender. Racemes 7 - 12 x 0.7 - 0.8 cm, solitary and terminal, with distant few flowered whorls; bracts and bracteoles minute; calyx 2.5 mm, long, tubular, 5 - toothed, teeth triangular, ciliate, corolla small, bilipped; stamens 4, exserted, stigmatic lobes slender.

**Habitat :** In wet places of hill forests at an altitude of 2000 m.

**Distribution :** Endemic to Nilgiri hills in Western Ghats of Tamilnadu. The species was described on the basis of perrottets collection from Ootacamund. In 1883 and 1885, M.A. Lawson reported it from Sispara of Nilgiri hills.

**Status :** Endangered

**161. Polyalthia rufescens** Hook. f.

**Family :** Annonaceae

**Description :** A tree, 7 - 10 m tomentose branches. Leaves simple, subsessile, 7.5 - 17.5 x 2.5 - 5.0 cm narrow oblong, acute or acuminate at apex. Obliquely cordate at base. Glabrous beneath, shining above. Flowers brown tomentose solitary, 1.5 cm long. Stamens cuneate, style oblong. Fruit a ring of 1-seeded berries.

**Habitat :** Semi evergreen forests upto an altitude of 800m.

**Distribution :** Tirunelveli hills in Tamilnadu.  
Endemic.

**Status :** Rare.

**Value :** Timber.

**162. Polycarpa diffusa** Wight.

**Family :** Caryophyllaceae

**Description :** Small slender, lax, 15 - 45 cm tall shrubs; branches glabrous. Leaves linear, narrow, 6 - 12 mm, obtuse, pseudovercillate, stipules 0.75 mm long, lanceolate. Cymes lax, puberulous, corymbose, many flowered. Flowers 2 mm long; sepals scarious, ovate - lanceolate, acuminate, nerveless; petals subequal to sepals, a little exceeding the stamens and acute capsule.

**Habitat :** On sandy gravelly areas in sunny open situations along the coastal areas.

**Distribution :** Endemic to Tuticorin, Tamilnadu (Wight). First collected by R. Wight from near Tuticorin in May 1835. The only latter collection of the plant is by K.M. Sebastine, from the same locality in November 1961.

**Status :** Vulnerable

**163. Popowia beddomeana** Hook.f.

**Family :** Annonaceae

**Description :** Shrubs or small trees. Leaves 5.5 - 9 x 3.8 cm, ovate or oblong, rounded or subcordate. Flowers small, solitary, leaf - opposed. Sepals ovate. Petals tomentose without; outer petals much larger than the inner.

**Habitat :** Tropical wet evergreen forests at 1000 - 1500 m in different terrains and steep, inhospitable slopes. The soil in the slopes has a characteristic yellow or red colour.

**Distribution :** Tamilnadu, Tirunelveli district : Kannikatti and Agastyamalai. Kerala, Trivandrum district. Endemic to the higher slopes of wet evergreen forests at the Southern end of Western Ghats, represented by a few trees.

**Status :** Rare

**164. Pouzolzia pentandra** Benn.

**Family :** Urticaceae

**Description :** Herb, 1m height. Leaves alternate, 3 - ribbed. Reduced in size upwards. Flowers minute, monoecious, sessile in axils of leaves. Fruit achene. Seed with a membranous testa.

**Habitat :** Found in Shola forests.

**Distribution :** Endemic. Nilgiri district and North Coimbatore.

**Status :** Endangered



**165. Pouzolzia wightii var. caudata Benn.**

**Family :** Urticaceae

**Description:** Tall, robust herb with many varieties. Leaves alternate, 3 - ribbed, reduced in size upwards. Flowers minute, monoecious, sessile in axils of leaves. Fruit achene. Seed with a membranous testa.

**Habitat :** Found in Moist deciduous forests.

**Distribution :** Endemic. Found in Tirunelveli - Courtallum.

**Status :** Endangered

**166. *Pronephrium thwaitesii* Hook.**

**Family :** Thelypteridaceae

**Description :** This is a fern. A slender shade loving plant with creeping rhizome, stipes 20 - 30 cm, scaly at base, glabrous above. Fronds 20 - 30 x 10 - 15 cm, deltoid or sub-deltoid, lowest pinnae stalked, herbaceous, pubescent. Sori spreading on maturity.

**Habitat :** It is a partial shade loving plant in moist humus soils, in the higher altitudes.

**Distribution :** Sispara - South India. The distribution is restricted to higher altitudes at about 1000m in moist humus soil. It could be located only in one particular spot along the flood zone of Kuntipuzha river in Silent valley, Kerala.

**Status :** Vulnerable

**167. Pseudocyclosorous gamblei**

Holtum.

**Family :** Thelypteridaceae

**Description :** This is a fern. Caudex unknown. Stipes 12cm long. Reduced pinnae 14 pairs, 4cm apart; apical lobe entire, 1.5 cm long, 3 - 5 mm wide; lower reduced pinnae with subentire narrow blade; Fronds 75cm long; pinnae more than 25 pairs; the largest pinna 22 x 24 cm, base subtruncate to broadly cuneate; edges lobed to 1 - 1.5 mm from costa; veins to 12 pairs; lower surface of rachis, costae and costules glabrous. Sori inframedial, lower ones slightly divergent and often a little elongate, sometimes asymmetric; indusia glabrous.

**Habitat :** It may be growing along stream sides at 1300 - 2000 m altitude in the forests as undergrowth.

**Distribution :** Endemic to the Nilgiri and Palani Hills.

**Status :** Endangered

**168. Pseudocyclosorous griseus** Baker.

**Family :** Thelypteridaceae

**Description :** This is a fern. Terrestrial herbs; caudex short creeping with close spiral of fronds; stipes 8cm long. Reduced pinnae 7 - 8 pairs, lobed halfway to costa, with an auricle of 2mm long. Fronds 60 cm long; pinnae 25 pairs, texture thin; aerophores slightly swollen. Largest pinna 11 x 1.4cm; base truncate; apex acuminate, lobes slightly falcate; costules upto 3.5mm apart; veins upto 10 pairs; upper surface of rachis and costae with hairs almost 1mm long; short suberect hairs on surface between veins. Sori slightly supyramidal; indusia bearing many short acicular hairs.

**Habitat :** It may be growing along streamsides at an altitude of 1300 - 2000 m in the forests as undergrowth.

**Distribution :** Endemic to South India - near Cochin and a recent collection from Pannaikadu, Palani hills, Dindigul District, Tamilnadu.

**Status :** Endangered

**169. Pseudoglochidion anamalayanum**

Gamble.

**Family :** Euphorbiaceae

**Description :** Evergreen small trees or shrubs, 5 - 6.5m tall. Leaves alternate, 4 - 9 x 1.5 - 3 cm, lanceolate, upper surface glabrous, glaucous below, entire; stipules minute, subulate, caducous; petioles short upto 3mm long. Flowers dioecious, in axillary clusters. Calyx biseriate, imbricate, petals 0. Male flower: disk annular, crenate. Female flower: disk conspicuous with 6 imbricate glands. Ovary ovoid. Capsules 0.8 - 1.1 mm long, glabrous, depressed; seeds trigonous; cotyledons fleshy, unequal.

**Habitat :** The species was recorded from the evergreen forest areas of the Anamalai hills in Southern Western Ghats. At 'Monica' in the Anamalais it was collected from an altitude of 1300 m.

**Distribution :** Endemic to Anamalai hills Tamilnadu. Barber originally collected it from Monica and subsequently Fischer located it at Aiyarapadi in the same hill range.

**Status :** Possibly Extinct.



**170. Psychotria globicephala** Gamble.

**Family :** Rubiaceae

**Description :** Glabrous shrubs. Leaves opposite, 10 - 14 x 3 - 5 cm, oblong - lanceolate or oblong - elliptic, membranous, glabrous above; petiole 1 - 2 cm long, glabrous; stipules interpetiolar, deciduous; 5 - 7 x 6 - 7 mm, broadly ovate. Flowers sessile 7 - 8 mm long, tubular. Calyx 4 x 4 mm, cupular, glabrous. Corolla tube 3 - 5 mm long, glabrous above. Stamens 5, exserted. Ovary inferior, 0.5 mm long. Seeds 6 - 8 x 4 - 6 mm, ovoid, plano - convex; albumen ruminant; embryo - minute.

**Habitat :** In forest floors at lower altitudes.

**Distribution :** Tamilnadu, Courtallum.  
Endemic.

**Status :** Endangered

**Value :** Hedge plant in gardens



**171. Pterospermum reticulatum Wight.**

**Tamil Name :** Mulipolavu

**Family :** Sterculiaceae

**Description :** Evergreen tree with reddish - brown hard wood, 8m tall. Leaves deeply lobed on young plants, elliptic - obovate, 7.5 - 10 x 3.5 - 5 cm, margin toothed towards the apex, prominently reticulate, rusty tomentose below. Flowers large, axillary, short pedunculate. Calyx lobes 2.5 - 3.5 cm long. Corolla lobes white. Ovary stipitate. Capsules 4 x 2.5 cm, ovoid, woody, with rusty stellate hairs; seeds 4 in each locule, apically winged.

**Habitat :** In evergreen forest patches in the hills at low elevations.

**Distribution :** Endemic to the W. Ghats in Karnataka, Kerala and Tamilnadu. It is known from Coimbatore and Tiruchirapalli through old records. At present some fragmented, populations are found scattered in Lower Kodayar (Kanniyakumari Dt).

**Status :** Rare

**Value :** Ornamental

## 172. *Rhynchosia velutina* Wt.

**Family :** Fabaceae

**Description :** Trailing or climbing herbs. Leaves trifoliate, leaflets 2.5x3.0cm, sub-orbicular, subcoriaceous, hoary grey-pubescent beneath. Flowers in axillary, 2 - 4 flowered short racemes. Pods 3.5 x 1.0cm, much curved, sparsely puberulous, 2 - seeded. Seeds 5 cm in diameter, obreniform, smooth, brown.

**Habitat :** The species forms a component of the coastal vegetation and is found growing "on sandy soil along the inland coast of Bay of Bengal".

**Distribution :** Endemic to the eastern coast (Thanjavur, Tirunelveli, Kanniyakumari). The species is based on Wight's collection from Nagapattinam in Thanjavur district. Gamble reported it from Tanjore and Tirunelveli. Subsequent to the type collection, it was collected "after a lapse of over 100 years" by Henry from Vivekanandapuram, Kanniyakumari district in January 1978.

**Status :** Vulnerable

**173. Rostellularia simplex Wt.**

**Family :** Acanthaceae

**Description :** Herbaceous plant. Leaves sessile, oblong, subobtuse. Flowers in spikes upto 7 cm long and 1.5 cm broad. Bracts, bracteoles and calyx lobes pectinately white. Fruit capsule.

**Habitat :** Found in dry grassy slopes at an altitude of 800 m.

**Distribution :** Endemic. During 1963 collected in Kuthiraivetti, in Singampatti R.F., Tirunelveli district.

**Status :** Rare.

**174. Salacia beddomei** Gamble.

**Family :** Celastraceae

**Description :** Large climbing shrubs; branchlets lenticellate, twining at base. Leaves elliptic - oblong to ovate, coriaceous; main nerves regular, nearly horizontal. Flowers greenish - yellow. Calyx lobes fringed. Fruits indehiscent berries with coriaceous rind.

**Habitat :** Grows on rocks in the valleys at 2300 - 3300 m, in the Western Himalayas.

**Distribution :** Endemic to South India in Anamalai hills in Tamilnadu and Palghat hills and other forest hill slopes in Kerala.

**Status :** Rare

**177. *Selaginella cataractrum* Alston.**

**Family :** Selaginellaceae

**Description :** This is a Pteridophytes. Stems 1.5 - 5.0 cm, wiry, procumbent, stramineous, branches irregularly bipinnate. Rhizophores small, wiry. Leaves heteromorphic, minutely denticulate; lateral leaves distant on the main stem, ovate, oblique, axillary leaves ovate - oblong. Strobili small 2 - 3 x 1 - 1.5 mm; sporophylls a few only, larger sporophylls ovate, oblique, subobtuse; smaller sporophylls ovate, cordate, subacute. Megaspores 200 - 300  $\mu\text{m}$ , dull - yellow, smooth to irregularly papillate ; microspores 20 - 22  $\mu\text{m}$ , deep - yellow, papillate.

**Habitat :** On rock boulders with mossy cover near permanent source of trickling water and along streams.

**Distribution :** Endemic to South India.

**Status :** Endangered

**178. *Senecio kundaicus* Fischer.**

**Family :** Asteraceae

**Description :** Glabrous herbs. Leaves alternate, upper cauline, 6 - 12 x 1.0 - 2.1 cm, sessile, linear - oblong. Corymbs terminal with few heads. Involucre bracts 30 in 1 series, with 1 - 2 shorter at the base. Ray florets few in 1 row; ligule yellow; limb elliptic - oblong, shortly 3 - toothed. Disk florets numerous, yellow.

**Habitat :** The species flowers in the month of September and was probably located in the vast stretches of grasslands (shrub-savannas) at high altitudes of Nilgiris.

**Distribution :** Endemic to the Nilgiri hills; so far reported only from Kundah range, Nilgiris, Tamilnadu based on the collection of P.V. Mayuranathan.

**Status :** Endangered



**179. Smilax wightii** A. DC.

**Tamil name :** Kattu kodi.

**Family :** Smilacaceae

**Description :** Large climbing shrubs, flowering branches stout, slightly zig-zag; leaves 7 - 12 x 5 - 10 cm, broadly ovate, orbicular or orbicular-ovate, acute; Petioles curved upwards or twisted above the middle, winged at base. Inflorescence an umbel, many flowered. Flowers : staminate, perianth linear - oblong. Berries globose, reddish when mature.

**Habitat :** In moist deciduous forests.

**Distribution :** Nilgiris and Anamalai hills of Tamilnadu. Endemic.

**Status :** Rare

# 180. *Sonerila pulneyensis* Gamble.

**Family :** Melastomataceae

**Description :** Herb, fleshy creeping stem, roots at intervals. Leaves 3 cm long, 2 cm broad, simple, opposite, bristly - serrate, glabrous, ribbed. Flowers bright purple, cymes, calyx tube funnel shaped, teeth 3, short. Petals 3, stamens 3, anthers lanceolate, ovary inferior, 3 - celled, many ovules, placenta axile; style simple. Fruit capsule. Seeds many, minute.

**Habitat :** Westernghats in ravines at an altitude of 2400 m.

**Distribution :** In Pambar in Palani hills, Tamilnadu. Endemic.

**Status :** Endangered.

**Value :** Attractive flowers, Horticulture. Responding well to propagation.

**181. *Sphaeropteris crinita* Hook. Tryon.**

**Family :** Cyatheaceae

**Description :** This is a tree fern. Trunk. Fronds bipinnate, stipes 40 cm or more long, dark purple near base; scales 3.5 cm long, long acuminate, thin, pale with dark short marginal setae. Primary pinnae upto 60cm long, rachis pale, warty. Secondary pinnae 10 - 12 cm long, basal segments not free; veins upto 12 pairs, usually forked, falcate, margins finely crenato-serrate. Sori exindusiate, nearer to costules; paraphyses slender, as long as sporangia.

**Habitat :** Grows on forested hill slopes between 1500 - 2100m altitudes.

**Distribution :** Beddome reported it from the Nilgiris, Anamalais of Tamilnadu. Last collection of this species in South India was made by A. Meebold in 1910. No recent collections have been made.

**Status :** Possibly Extinct.

**182. Syzygium courtallense** Alston.

**Family :** Myrtaceae

**Description :** Trees; branchlets pale brown, subtetragonous. Leaves opposite, 7 - 13 x 4 - 6 cm, elliptic coriaceous; leaf nerves and intramarginal nerve not conspicuous, the latter irregular and often double. Flowers in terminal corymbose cymes; Calyx tube 12 - 15 mm long; petals 4, orbicular, spreading. Fruits not known.

**Habitat :** Moist deciduous forests of Southern Western Ghats where the precipitation is high just after the onset of Monsoon in June.

**Distribution :** South India; confined to a single locality in Courtallum hills of Tamilnadu.

**Status :** Endangered

**183. *Syzygium gambleanum* Rathakr.**

**Family :** Myrtaceae

**Description :** Small trees or large shrubs, branching profusely; branchlets angled. Leaves opposite, rarely alternate, 8 - 12 x 3 - 5 mm, elliptic - oblong, obtuse, coriaceous; nerves inconspicuous. Flowers in umbels of 5 - 10 at the end of branchlets; petals free. Fruits unknown.

**Habitat :** The only known locality is along the Muthukuzhi river banks at an altitude of 1500 m in the evergreen forests of Southern Western Ghats.

**Distribution :** South India; endemic in Kanyakumari district. R.H. Beddome collected this species between 1864 - 81. There is no collection afterwards.

**Status :** Possibly Extinct.

**184. Tephrosia barberi** Drumm.

**Family :** Fabaceae

**Description :** Undershrubs, erect, branched, young branches angled. Leaves imparipinnate, 6 cm long, rachis slender, brownish hairy; leaflets 7 - 9, 0.8 - 1.5 x 0.5 - 1.0 cm, obovate, emerginate. Racemes 15cm long, axillary or terminal. Flowers 5mm long, Pedicels 3mm long. Vexillum 4 x 5 mm, broadly ovate; wings 3 x 4 mm; pods 2.3 x 0.5 cm, compressed, 3 - 4 seeded.

**Habitat :** It grows usually upto an elevation of 75m in hill slopes and occasionally in sandy loamy soil.

**Distribution :** Southern and Eastern parts of Tamilnadu (Tirunelveli, Tuticorin, Sayalgudi). Endemic. The species was last collected from Sayalgudi (Ramanathapuram District) in 1977.

**Status :** Rare



**185. Tephrosia calophylla** Bedd.

**Family :** Fabaceae

**Description :** Undershrubs, 20 cm high, with woody rootstock and crown stem; stem glabrous - angled. Leaves 1 - foliate, narrow - lanceolate, downy when very young. Racemes terminal, elongated; pedicels 1cm long, pubescent in flowers, glabrous in fruit with subulate bract at base. Pods 7 x 5 cm, 6 - 9 seeded

**Habitat :** Grows on dry rocky hill slopes upto 1000m altitude.

**Distribution :** Tamilnadu (North Coimbatore); Karnataka (Hassan). Endemic.

**Status :** Rare

**186. Terniola zeylanica** Tul.  
**(Lawia zeylanica)**

**Family :** Podostemonaceae

**Description :** Herb, an smooth rocks on the side of waterfalls. Submerged during SW monsoon. Flowering in dry season when exposed. Thallus closely attached to the rock. Attached by root hairs usually much branched with ribbon like lobes. Leaves numerous, simple, entire, acute, green or red. Flowers terminal on growing points of the margin of the Thallus. Stamens 3. Capsule ellipsoid, 9 ribbed, 3 celled.

**Habitat :** Found on smooth rocks in waterfalls.

**Distribution :** Endemic in Tamiraparani river in Tirunelveli district.

**Status :** Endangered

**187. *Teucrium plectranthoides* Gamble.**

**Family :** Lamiaceae

**Description :** Slender erect herbs with 4 angled stems. Leaves opposite, petioled, membranous, ovate, acute, base entire. Racemes lax flowered with leafy bracts, terminal and axillary, bracts linear - lanceolate. Calyx campanulate, sparsely glandular hairy, corolla white.

**Habitat :** It grows on hilly tracts at higher altitudes.

**Distribution :** Sengaltheri in Tirunelveli hills, Western Ghats. Endemic.

**Status :** Vulnerable

**188. Thottea barberi** Gamble.

**Family :** Aristolochiaceae

**Description :** Undershrubs. Leaves 5.0 - 16.0 x 3.0 - 5.0 cm, lanceolate - acuminate, basal pair of nerves reaching half way up the leaf. Inflorescence axillary or subradial bracteate cymes. Flowers pinkish. Stamens in single groups; filaments slender; anther lobes glabrous. Style lobes glabrous. Capsules 2.5 - 3.5 cm long, moniliform, glabrous. Seeds oblong, trigonous.

**Habitat :** Shady places in evergreen forests at 1000m altitude.

**Distribution :** Endemic to Tirunelveli in W. Ghats. The species was first described as *Apama barberi* on Barber's collection, dated on May 1901, from Kannikatti in Tirunelveli district. DR. Ridsale reportedly located it from the adjacent Papanasam area in 1976.

**Status :** Vulnerable

**189. Toxocarpus beddomei** Gamble.

**Family :** Asclepiadaceae

**Description :** Climbers with milky latex. Leaves upto 10.5 x 4.5 cm, lanceolate or elliptic - lanceolate, thick - margined, glabrous, glossy, pale when dry. Flowers white, scented, dichotomous cymes; pedicels upto 4mm long, rusty puberulous; corolla 1 cm long; tube short, villous within.

**Habitat :** Dense evergreen forests, at altitudes from 1300 to 1500m.

**Distribution :** Muthukuzhivayal in Kanyakumari district & Attyramalai in Tirunelveli district. Endemic. The species was collected by R.H. Beddome in 1870 and relocated by Henry and Swaminathan in the year 1979.

**Status :** Rare

**190. *Toxocarpus palghatensis* Gamble.**

**Family :** Asclepiadaceae

**Description :** Slender climber with smooth opposite leaves, elliptic obovate dark green in colour. Young parts nearly black, tomentose. Flowers white, panicles. Calyx very small, 5 lobe. Corolla tube linear oblong, 5 lobe. Stamens inserted at the base of corolla. Ovary of 2 carpels. Seeds oblong and flattened.

**Habitat :** Found in forest with good rainfall.

**Distribution :** Anamalai hills. Endemic. Recently collected from Silent valley in Kerala.

**Status :** Endangered.



**191. *Urginea polyphylla* Hook.f.**

**Family :** Liliaceae

**Description :** Small 20 - 25 cm long, slender, scapigerous herbs. Leaves linear. Flowers about 6 in terminal raceme, small, bisexual, hypogynous, bracteate, companulate; bracts persistent. Stamens 6, free; filaments slender. Style as long as the perianth.

**Habitat :** On the slopes of hills or on table land.

**Distribution :** Western Ghats. Endemic.

**Status :** Possibly Extinct.

**Value :** Related to *U. indica* known for medicinal properties.

**192. Vanasushava pedata** Wight.

**Family :**           Apiaceae

**Description :** Perennial, hispidulous. Leaves alternate, petiolate, orbicular. Umbels leaf-opposed. Bracts absent or one. Flowers polygamous; petals white. Fruits ovoid - oblong, ribs filiform; seed face sulcate; carpophore absent.

**Habitat :**       A trailing perennial, rooting at the nodes forming a ground cover in the shola forests.

**Distribution :** Endemic in the hills of South India; reported from the Shevagherry hills, Palani hills, Anamalai hills, and Cardamom hills.

**Status :**       Rare

**193. *Vanda wightii* Reichb.f.**

**Family :** Orchidaceae

**Description :** This is an orchid. Epiphytes. Leaves narrowly ligulate, unequally and acutely 2 - lobed, more than 30 cm long. Scapes few - flowered. Lip 3 - lobed; sidelobes subquadrate; midlobe broadly ovate, obtusely 2 - lobed; spur conical. Column slender.

**Habitat :** The habitat of the species in particular is not clearly known. However, the genus *vanda* R.Br. which is represented by three other species in Nilgiris, perch on the branches of rough - barked trees at an altitude of 500 - 1900 m.

**Distribution :** Peninsular India; endemic to Nilgiri hills of the Western Ghats in Tamilnadu. There is no record of its re-location in the wild ever since. Reichenbach described the species in 1861 based on the collection of Wight from Nilgiris.

**Status :** Possibly Extinct.

**194. *Vanilla wightiana* Lindl.**

**Family :** Orchidaceae

**Description :** This is an orchid. Scandent herbs climbing by means of aerial roots from the nodes. Stems fleshy, green; internodes 5 - 12 cm long. Scape arising from the nodes, 3 - 5 flowered. Flowers cream coloured with a pale - green tinge, 3 cm across. Sepals oblong - ovate. Petals oblong, 2.2 x 1 cm. Lip trumpet - shaped; disk barbate - hairy.

**Habitat :** Climbs on forest trees especially along river - banks.

**Distribution :** Endemic to the Southernmost part of the Western Ghats. It was first reported by Lindley in 1840 based on a collection of Wight from Travancore. Recent gatherings include those of Vatsala (1964) from Tirunelveli which are in cultivation in the Kerala University Botanical Garden and of Henry (1981) from Kanyakumari which is under cultivation in the National Orchidarium of the Botanical Survey of India at Yercaud.

**Status :** Rare

**195. *Vateria macrocarpa* B.L. Gupta.**

**Tamil name :** Vellapayini

**Family :** Dipterocarpaceae

**Description :** Trees, 8 - 10 m tall. Leaves reaching about 25 x 12 cm, elliptic oblong or oblong - lanceolate, entire, glabrous on both surfaces. Petiole 2.5 - 6 cm. Flowers in axillary panicles, shorter than the leaves. Calyx lobes 3mm long. Corolla lobes 1.5 cm long, elliptic, coriaceous. Stamens numerous; anthers linear, glabrous. Ovary 3 - celled; style subulate. Capsules reaching 11 cm long & 6 cm broad, ovate, coriaceous, splitting from the top downwards at maturity into 3, 1 - seeded valves.

**Habitat :** On open rocky slopes.

**Distribution :** Endemic to Peninsular India. So far known only from Muthukulam, Boluampatty range in Coimbatore district.

**Status :** Rare

**196. Ventilago goughii** Gamble.

**Family :** Rhamnaceae

**Description :** Climbing shrub. Leaves alternate crenate, stipules very small, caducous, oblong - lanceolate. Flowers small in axillary or terminal panicles. Calyx 5 lobes, petals 5, stamens 5, adnate to the base of the petals and opposite to them. Ovary sunk in the disk, 2-celled, style very short; stigmas 2. Fruit seeded nut.

**Habitat :** Found in deciduous forests at an altitude of 1000m in Nilgiris and also in lesser elevations.

**Distribution :** Endemic. During 1972 located in Kunjapanai, Nilgiris and Thirukarungudi in Tirunelveli district, Tamilnadu.

**Status :** Rare



# 197. *Vernonia gossypina* Gamble.

**Family :** (Asteraceae)

**Description :** Undershrub. Leaves densely white-woolly beneath lanceolate, gradually narrowed above. Inflorescence very small 5 - flowered, pedunculate corymbs, cottony. Fruit achenes, sharply angled, very glandular.

**Habitat :** Found in semi evergreen forest at an altitude of 800 m.

**Distribution :** Endemic. During 195 collected from Singampatt Tirunelveli district in Tamilnadu. Previously collected from Naterikal and Sengaltheri in Tirunelveli district.

**Status :** Rare

**198. Vernonia pulneyensis** Gamble.

**Family :** Asteraceae

**Description :** A slender undershrub, not much branched. Leaves 5 - 10 x 2 - 4 cm, ovate, acute, membranaceous, sparsely moniliform hairy above. Flower - heads medium sized, 12 - 15 flowered, purple, white cottony, in short. Outer involucre bracts ovate, long mucronate, inner obtuse. Achenes 10 - ribbed, glabrous; Pappus 5mm long, white.

**Habitat :** In open forests along the banks of rivers at high altitudes.

**Distribution :** Endemic to pulney hills of Southern Western Ghats, occurring along the banks of the Pambar river and Shembaganur hill side in Kodaikanal at an altitude of about 2300m.

**Status :** Endangered

**199. Vernonia recurva** Bedd.

**Family :** Asteraceae

**Description :** It is a shrub; stems quadrangular, densely brown - pubescent. Leaves 6 - 9 x 2.5 - 4.5 cm, ovate or ovate - oblong, crenate - serrulate, mucronate, membranaceous; petioles small. Heads about 40 - flowered, in corymbs. Outer involucral bracts long, aristate, recurved. Achenes clavate - turbinate ; pappus yellowish.

**Habitat :** Probably occurs in high altitude grasslands (shrub - savannas)

**Distribution :** Endemic to Southern Western Ghats; restricted to Anamalai hills of Tamilnadu at an altitude of 2000 m.

**Status :** Possibly Extinct.

**200. Vernonia shevaroyensis** Gamble.

**Family :** Asteraceae

**Description :** A small tree with rather thin nearly glabrous leaves. Leaves ovate or ovate-oblong, crenate - serrulate, mucronate, membranaceous; petioles small. Heads about 40 flowered, in corymbs, pale blue flowers. Achenes clavate - turbinate; pappus yellowish.

**Habitat :** At present only 1 tree is existing in a private estate in Shevaroy. Seeds have been now collected and seedlings have been raised in the nursery by the Forest department, Salem division. It comes at an altitude of about 1000m.

**Distribution :** Endemic to Southern Western Ghats, Shevaroy hills of Salem district.

**Status :** Endangered.

**201. *Wendlandia angustifolia* Wight.**

**Family :** Rubiaceae

**Description :** Glabrous tree. Leaves ternately whorled, 4 - 11 x 0.5 - 1.75 cm, narrowly linear - lanceolate, acute, coriaceous, not shining. Flowers rather crowded, often pedicelled; bracts ligulate, acuminate. Calyx tube turbinate, glabrous. Corolla tube slender, about 5 mm long; lobes almost orbicular, small. Stamens exserted, filaments short; anthers dorsifixed, linear. Style about 6 mm long, exserted; stigma bifid. Fruit globose, about 2mm across, rugose.

**Habitat :** In river beds at low altitudes.

**Distribution :** South India : Courtallum and Kannikatti in Tirunelveli, Tamilnadu. Endemic.

**Status :** Possibly Extinct.

**202. *Youngia nilgiriensis* Babcock.**

**Family :** Asteraceae

**Description :** Perennial herbs, 30 - 47 cm high. Radial leaves 10 - 16 x 1.5 - 3.0 cm, oblanceolate, upper surface puberulous, lower surface glabrous; petiole long; upper ones sessile, lanceolate. Heads 2 - 4 together, about 13 - flowered. Flowers yellow. Corolla 9 - 10 mm long; ligule 2mm broad; tube 2 mm long, acuminate. Anthers 2mm long; filament 1 mm long. Achenes 5 mm long, brown. Pappus 5mm long, 2 - 3 serrate, ash-grey.

**Habitat :** Montane variation of wet evergreen forests in Nilgiris, Tamilnadu.

**Distribution :** Endemic to a single locality in Western ghats at Sispara, Nilgiri hills at an altitude of about 2060m.

**Status :** Possibly Extinct.



## FAMILYWISE NUMBER OF SPECIES

1)	Acanthaceae	-	7
2)	Amaranthaceae	-	1
3)	Anacardiaceae	-	1
4)	Annonaceae	-	6
5)	Apiaceae	-	6
6)	Aquifoliaceae	-	1
7)	Arecaceae	-	1
8)	Aristolochiaceae	-	2
9)	Asclepiadaceae	-	12
10)	Asteraceae	-	5
11)	Athyriaceae	-	1
12)	Balsaminaceae	-	4
13)	Begoniaceae	-	3
14)	Bonnetiaceae	-	1
15)	Capparaceae	-	5
16)	Caryophyllaceae	-	1
17)	Celastraceae	-	4
18)	Chrysobalanaceae	-	1
19)	Commelinaceae	-	9
20)	Companulaceae	-	1
21)	Compositae Asteraceae	-	2
22)	Coniferae	-	1
23)	Crassulaceae	-	1
24)	Cyatheaceae	-	2
25)	Cycadaceae	-	1
26)	Cyperaceae	-	3
27)	Dicranopteridaceae	-	1
28)	Dioscoriaceae	-	1
29)	Dipterocarpaceae	-	1
30)	Elaeocarpaceae	-	4
31)	Elaphoglossaceae	-	3

32)	Euphorbiaceae	-	1
33)	Fabaceae	-	20
34)	Flacourtiaceae	-	1
35)	Gesneriaceae	-	1
36)	Hypericaceae	-	1
37)	Lamiaceae	-	9
38)	Lauraceae	-	4
39)	Liliaceae	-	3
40)	Lindsaeaceae	-	1
41)	Malvaceae	-	1
42)	Melastomataceae	-	4
43)	Mimosaceae	-	1
44)	Myrsinaceae	-	1
45)	Myrtaceae	-	4
46)	Nymphaeaceae	-	1
47)	Orchidaceae	-	14
48)	Piperaceae	-	1
49)	Poaceae	-	2
50)	Podostemaceae	-	1
51)	Podostemonaceae	-	1
52)	Ranunculaceae	-	1
53)	Rhamnaceae	-	1
54)	Rosaceae	-	1
55)	Rubiaceae	-	18
56)	Rutaceae	-	2
57)	Sapotaceae	-	1
58)	Selaginellaceae	-	1
59)	Smilacaceae	-	1
60)	Sterculiaceae	-	3
61)	Thelypteridaceae	-	3
62)	Urticaceae	-	2
63)	Violaceae	-	1
64)	Vitaceae	-	2
65)	Zingiberaceae	-	1

## DISTRICTWISE LIST OF SPECIES

*The degree of threat to each species have been indicated, after the name of the plant as given below :*

1. Extinct (Ex)
2. Endangered (E)
3. Vulnerable (V)
4. Rare (R)
5. Indeterminate (Possibly Extinct) (I)
6. Insufficiently known (K)
7. Out of danger (O)

### 1. Tirunelveli district :

No. of Species - 60

**Acranthera grandiflora** Bedd. (E)  
**Aerva wightii** Hook. f. (I)  
**Apama barberi** Gamble. (R)  
**Atuna travancorica** Kosterm. (I)  
**Begonia cordifolia** Wight. (R)  
**Belosynapsis kewensis** Hassk. (E)  
**Bentinckia condapanna** Berry ex Roxb. (R)  
**Bulbophyllum albidum** Hook. f. (I)  
**Capparis diversifolia** Wight. (V)  
**Capparis fusifera** Dunn. (R)  
**Capparis rheedi** Dc. (R)  
**Capparis shevaroyensis** Sundararaghavan. (V)  
**Cayratia roxburghii** Wight et Arn. (V)  
**Ceropegia omissa** Huber. (E)  
**Cinnamomum gracile** Hook. f. (R)  
**Cleome burmanni** Wight et Arn. (I)  
**Commelina indehiscens** Barnes. (R)  
**Corymborchis veratrifolia** Reinw. (R)



***Terniola zeylanica*** Tul. (*Lawia zeylanica*) (E)  
***Teucrium plectranthoides*** Gamble. (V)  
***Thottea barberi*** Gamble. (V)  
***Toxocarpus beddomei*** Gamble. (R)  
***Vanilla wightiana*** Linde. (R)  
***Vernonia gossypina*** Gamble. (R)  
***Wendlandia angustifolia*** Wight. (I)

## 2. Upper Palanis :

No. of Species - 26

***Acrocephalus palaniensis*** Mukerjee. (I)  
***Actinodaphne bourneae*** Gamble. (I)  
***Campanula alphonsii*** Wall. (R)  
***Ceropegia metziana*** Miq. (I)  
***Coelogyne mossiae*** Rolfe. (V)  
***Commelina hirsuta*** Clarke. (R)  
***Commelina wightii*** Rollarao. (I)  
***Cotoneaster buxifolius*** Wall. (V)  
***Crotalaria digitata*** Hook. (R)  
***Crotalaria fysonii*** var. *glabra* Gamble. (E)  
***Crotalaria kodaiensis*** Debberm. (E)  
***Crotalaria peduncularis*** Grah. (R)  
***Dicranopteris linearis*** var. *sebastiana* Burm. f. (V)  
***Elaeocarpus blascoi*** Weibel. (R)  
***Elaeocarpus recurvatus*** Corner. (E)  
***Elaphoglossum stigmatolepis*** Moore. (V)  
***Hedyotis swersiioides*** Hook. f. (R)  
***Hydrocotyle conferta*** Wt. (R)  
***Pimpinella pulneyensis*** Gamble. (I)  
***Plectranthus bishopianus*** Gamble. (I)  
***Plectranthus bourneae*** Gamble. (I)  
***Pseudocyclosorus gamblei*** Holttum. (E)  
***Pseudocyclosorus griseus*** Baker. (E)  
***Sonerila pulneyensis*** Gamble. (E)  
***Vanasushava pedata*** Wight. (R)  
***Vernonia pulneyensis*** Gamble. (E)



## 3. Nilgiris district :

No. of Species - 76

- Acacia hohenackeri* Craib. (R)  
*Actinodaphne lanata* Meisner. (I)  
*Actinodaphne lawsonii* Gamble. (R)  
*Begonia aliciae* C.E.C. Fischer. (E)  
*Bulbophyllum acutiflorum* A. Rich. (I)  
*Bulbophyllum albidum* Hook. f. (I)  
*Bulbophyllum aureum* Hook. f. (I)  
*Bulbophyllum elegantulum* Rolfe. (V)  
*Bulbophyllum kaitiense* Wight. (V)  
*Bunium nothum* Clarke. (I)  
*Campanula alphonsii* Wall. (R)  
*Carex christii* Boeck. (I)  
*Carex pseudoptera* Kuckenth. (I)  
*Carex vicinalis* Boott. (I)  
*Cayratia pedata* var. *glabra* Gamble. (R)  
*Ceropegia barnesii* Bruce et Chatterjee. (E)  
*Ceropegia decaisneana* Wight. (R)  
*Ceropegia metziana* Miq. (I)  
*Ceropegia pusilla* Wight et Arn. (R)  
*Ceropegia spiralis* Wight. (V)  
*Clematis theobromina* Dunn. (R)  
*Coelogyne mossiae* Rolfe. (V)  
*Commelina hirsuta* Clarke. (R)  
*Commelina tricolor* Barnes. (V)  
*Commelina wightii* RollaRao. (I)  
*Corymborchis veratrifolia* Reinw. (R)  
*Cotoneaster buxifolius* Wall. (V)  
*Crotalaria globosa* Wight. (R)  
*Crotalaria longipes* Wight. (E)  
*Crotalaria peduncularis* Grah. (R)  
*Crotalaria priestleyoides* Benth. (R)  
*Cyathea nilgirensis* Holtt. (E)  
*Cynometra travancorica* Bedd. (R)  
*Dicranopteris linearis* var. *sebastiana* Burm. f. (V)



- Elaeocarpus munroii* Mast. (R)  
*Elaphoglossum beddomei* Sledge. (R)  
*Elaphoglossum nilgircum* Krajina. (E)  
*Elaphoglossum stigmatolepis* Moore. (V)  
*Euonymus angulatus* Wight. (E)  
*Euonymus serratifolius* Bedd. (I)  
*Eriochrysis rangacharii* Fischer. (I)  
*Gymnema montanum* Hook. (E)  
*Habenaria barnesii* Summerh. (R)  
*Hedyotis hirsutissima* Bedd. (I)  
*Hydrocotyle conferta* Wt. (R)  
*Hypericum japonicum* Thunb. var. *major* Fyson. (R)  
*Ilex gardneriana* Wight. (I)  
*Impatiens laticornis* C.E.C. Fischer. (I)  
*Impatiens neo-barnesii* Fischer. (E)  
*Impatiens nilagirica* Fischer. (E)  
*Liparis biloba* Wight. (V)  
*Mackenzia caudata* Ramam. (R)  
*Mahonia leschenaultii* Takeda. (E)  
*Melicope indica* Wight. (V)  
*Memecylon flavescens* Gamble. (E)  
*Memecylon sisparaense* Gamble. (I)  
*Microtropis densiflora* Wt. (R)  
*Miliusa nilagirica* Bedd. (V)  
*Ophiorrhiza brunonis* Wight. (I)  
*Ophiorrhiza pykarensis* Gamble. (I)  
*Pavetta hohenackeri* Brem. (V)  
*Pavetta wightii* Hook. f. (I)  
*Podocarpus wallichiana* Presl. (R)  
*Pogostemon atropurpureus* Benth. (R)  
*Pogostemon nilagircus* Gamble. (E)  
*Pogostemon paludosus* Benth. (E)  
*Pouzolzia pentandra* Benn. (E)  
*Pronephrium thwaitesii* Hook. (V)  
*Pseudocyclosorus gamblei* Holttum. (E)  
*Rhyncosia velutina* Wt. (V)

*Saprosma fragrans* Bedd. (E)  
*Senecia kundaicus* Fischer. (E)  
*Smilax wightii* A. Dc. (R)  
*Sphaeropteris crinita* Hook. Tryon. (I)  
*Vanda wightii* Reichb. f. (I)  
*Ventilago goughii* Gamble. (R)  
*Youngia nilgiriensis* Babcock. (I)

4. Coimbatore district,  
 Anamalai hills:

No. of Species-39

*Albizia thompsonii* Brandis. (R)  
*Amomum microstephanum* Baker. (R)  
*Anisochilus wightii* Hook. f. (R)  
*Antistrophe serratifolia* Hook. f. (R)  
*Begonia anamalayana* Bedd. (I)  
*Capparis fusifera* Dunn. (R)  
*Ceropegia decaisneana* Wight. (R)  
*Ceropegia fimbriifera* Bedd. (V)  
*Ceropegia maculata* Bedd. (I)  
*Crotalaria clavata* Wight. (E)  
*Crotalaria peduncularis* Grah. (R)  
*Crotalaria priestleyoides* Benth. (R)  
*Crotalaria rigida* Heyne. (R)  
*Crotalaria scabra* Gamble. (R)  
*Cyanotis cerifolia* RollaRao. (I)  
*Desmos viridiflorus* Bedd. (I)  
*Elaphoglossum beddomei* Sledge. (R)  
*Euonymus serratifolius* Bedd. (I)  
*Gymnema montanum* Hook. (E)  
*Hedyotis buxifolia* Bedd. (R)  
*Hedyotis eualata* Bedd. (R)  
*Helichrysum perlanigerum* Gamble. (R)  
*Kalanchoe olivacea* Palz. (R)  
*Kendrickia walkeri* Hook. f. (I)

**Lepidagathis barberi** Gamble. (I)  
**Lepidagathis diffusa** Clarke. (I)  
**Miliusa nilagirica** Bedd. (V)  
**Peucedanum anamallayense** Clarke. (R)  
**Pouzolzia pentandra** Benn. (E)  
**Pseudoglochidion anamalayanum** Gamble. (I)  
**Pterospermum reticulatum** Wight. (R)  
**Salacia beddomei** Gamble. (R)  
**Smilax wightii** A. Dc. (R)  
**Sphaeropteris crinita** Hook Tryon. (I)  
**Tephrosia calophylla** Bedd. (R)  
**Toxocarpus palghatensis** Gamble. (E)  
**Vanasushava pedata** Wight. (R)  
**Vateria macrocarpa** B.L. Gupta. (R)  
**Vernonia recurva** Bedd. (I)

#### 5. Dindigul district :

No. of Species —————

**Anisochilus argenteus** Gamble. (V)  
**Crotalaria clavata** Wight. (E)  
**Crotalaria globosa** Wight. (R)

#### 6. Madurai, Sivaganga, Theni, Virudhunagar district :

No. Species —————

**Anoectochilus rotundifolius** Blatt. Balak. (I)  
**Chrysoglossum halbergii** Blatt. (I)  
**Commelina indehiscens** Barnes. (R)  
**Dicranopteris linearis** var. *sebastiana* Burm. f. (V)  
**Eugenia discifera** Gamble. (E)  
**Lepidagathis barberi** Gamble. (I)  
**Peucedanum anamallayense** Clarke. (R)  
**Santapaua madurensis** Balakr (E)

**7. Kanyakumari district :****No. of Species - 16**

- Adhatoda beddomei** Clarke. (R)  
**Belosynapsis kewensis** Hassk. (E)  
**Bentinckia condapanna** Berry ex Roxb. (R)  
**Bulbophyllum aureum** Hook. f. (I)  
**Crotalaria scabra** Gamble. (R)  
**Didymocarpus missionis** Wall. (R)  
**Elaeocarpus venustus** Bedd. (V)  
**Hydnocarpus macrocarpa** Bedd. ssp. macrocarpa (E)  
**Kingiodendron pinnatum** Harm. (R)  
**Ochreinauclea missionis** Wall. (V)  
**Piper barberi** Gamble. (R)  
**Pterospermum reticulatum** Wight. (R)  
**Rhyncosia velutina** Wt. (V)  
**Syzygium gambleanum** Rathakr. (I)  
**Toxocarpus beddomei** Gamble. (R)  
**Vanilla wightiana** Lindl. (R)

**8. Ramanathapuram district :****No. of Species - 5**

- Capparis shevaroyensis** Sundararaghavan. (V)  
**Cleome burmanni** Wight et Arn. (I)  
**Eriolaena lushingtonii** Dunn. (V)  
**Lepidagathis barberi** Gamble. (I)  
**Tephrosia barberi** Drumm. (R)

**9. Salem, Namakkal, Dharmapuri & Erode district :****No. of Species - 7**

- Crotalaria clavata** Wight. (E)  
**Crotalaria digitata** Hook. (R)  
**Crotalaria longipes** Wight. (E)  
**Crotalaria scabra** Gamble. (R)



**Hildegardia populifolia** Roxb. (E)  
**Indigofera barberi** Gamble. (R)  
**Vernonia shevaroyensis** Gamble. (E)

**10. South Arcot, Villupuram,  
 Thiruvannamalai &  
 North Arcot district :**

**No. of Species - 2**

**Indigofera barberi** Gamble. (R)  
**Neuracanthus neesianus** Wight. (I)

**11. Tiruchirapalli, Karur &  
 Perambalur district :**

**No. of Species - 2**

**Pavetta hohenackeri** Brem. (V)  
**Pterospermum reticulatum** Wight. (R)

**12. Tuticorin district :**

**No. of Species - 2**

**Polycarpa diffusa** Wight. (V)  
**Tephrosia barberi** Drumm. (R)

**13. Tanjore, Thiruvarur, Pudukottai &  
 Nagapattinam district :**

**No. of Species - 2**

**Rhyncosia velutina** Wt. (V)  
**Santapaua madurensis** Balakr. (E)

**14. Chengalput, Thiruvallur district &  
 Chennai City :**

**No. of Species - 5**

**Aponogeton appendiculatus** Van Bruggen. (I)  
**Decaschistia rufa** Craib. (I)  
**Hildegardia populifolia** Roxb. (E)  
**Lindsaea malabarica** Bedd. (E)  
**Murdannia lanceolata** Wight. (V)

## **NUMBER OF PLANT SPECIES UNDER DIFFERENT IUCN CATEGORIES**

<b>IUCN CATEGORY</b>	<b>No. OF SPECIES</b>
1. ENDANGERED	45
2. POSSIBLY EXTINCT	53
3. VULNERABLE	29
4. RARE	75
<b>TOTAL</b>	<b>202</b>



**105. Hedyotis hirsutissima** Bedd.

**Family :** Rubiaceae

**Description :** A shrub with stout stems, 5 - 15 cm long, branches articulate with stipular scars. Leaves opposite, sessile or shortly petioled, 1-5 x 0.8 - 2.5cm, ovate, coriaceous, densely yellowish hirsute hairy; nerves 3-4 pairs, hirsute; petiole 1-2mm long, hirsute; stipules interpetiolar, deeply pectinate. Flowers pale-lilac, pedicelled, 18-20 mm long, bracteate, hirsute; bracts foliaceous; pedicel 1-2mm long. Capsule globose, 2-3 x 2 - 2.3mm, hirsute. Seeds few, angular, narrowly winged, brownish in colour. This species is characterised by long and stiff hairs i.e. hirsute.

**Habitat :** Hilly region in the Nilgiris.

**Distribution :** Endemic. Found in Nilgiris which is now a Biosphere Reserve.

**Status :** Possibly Extinct.

## **GLOSSARY OF TECHNICAL TERMS**

**ACCRESCENT**, enlarged and persistent.

**ACHENE**, a one-seeded small dry indehiscent fruit of one carpel.

**ACICULAR**, needle-shaped.

**ACORN**, fruit of oak; a nut enclosed by an involucre of thickened bracts.

**ACROPETAL**, produced successively towards tip.

**ACULEATE**, prickly.

**ACUMINATE**, tapering to a point in hollow curves.

**ACUTE**, tapering to a sharp point in straight lines; i.e. describing an acute angle.

**ADNATE**, said to denote union of dissimilar parts.

**ADPRESSED**, lying close against the producing surface.

**ADVENTITIOUS**, said of parts occurring in unusual positions.

**AESTIVATION**, the mode in which the floral leaves are folded in bud.

**AGGREGATE**, (fruit) many fruits from one flower.

**ALBUMEN**, endosperm of seed; food material in seed outside embryo.

**ALTERNATE**, leaf one at a node.

**AMPLEXICAUL**, clasping or embracing the stem.

**ANALOGOUS**, agreeing in function but not in origin.

**ANATROPOUS**, said of inverted ovule.

**ANDROECIUM**, collective term for stamens.

**ANDROPHORE**, stalk supporting stamens.

**ANNULATE**, marked with rings.

**ANTERIOR**, side facing the bract.

- ANTHER, part of stamen that bears pollen.
- APICULATE, with small sharp point.
- APOCARPOUS, with free carpels.
- APPRESSED, lying flat for the whole length.
- ARBORESCENT, woody; resembling a tree.
- ARCUATE, moderately curved.
- AREOLE, a space marked out in any way; a small cell or cavity.
- ARIL, an outgrowth of seed coat.
- ARILLATE, having an aril.
- ARISTATE, awned.
- ARTICULATE, jointed.
- ASCENDING, directed obliquely upward.
- ASTRINGENT, having the property of contracting.
- AURICLED, with small rounded lobes overlapping stem.
- AURICULATE, ear-like.
- AWL-SHAPED, tapering to a fine point from a broad base; subulate.
- AWN, a bristle-like appendage, especially of glumes of grasses.
- AXIL, the upper angle formed by the leaf on the stem.
- AXILE, (placentation) belonging to the axis; placenta distributed along the central axis of the ovary.
- AXILLARY, in or relating to the axil.
- AXIS, the stem.
- BACCATE, berry-like; pulpy.
- BARK, outer coat of a tree.
- BASIFIXED, (anther) jointed to filament at base.
- BAST, fibrous inner bark.

**BERRY**, one or more seeded fleshy fruit having no hard part except the seeds.

**BIFARIOUS**, (leaves) 2 - ranked; in two opposite vertical rows.

**BIFID**, divided into two segments to about the middle.

**BIFURCATE**, two forked.

**BILABATE**, having two lips; 2 - lipped.

**BIPARTITE**, divided into two segments almost to the base.

**BIPINNATE**, twice pinnate.

**BISERiate**, in two series or rows.

**BISEXUAL**, (flower) having both sexes; hermaphrodite.

**BITERNATE**, by threes; compound ternate.

**BLADE**, lamina; flat part of the leaf.

**BOLE**, main axis or trunk of a tree.

**BRACt**, a modified leaf subtending a flower or flowers.

**BRACtEATE**, (flower) having bract.

**BRACtEOlate**, (flowers) having bracteoles.

**BRACtEOLE**, secondary bract usually more than one on the flower stalk.

**BULB**, short underground stem more or less conical covered with scaly or fleshy leaves and buds above and flattened with roots below.

**BULBIL**, small bulb, usually in place of a flower in the inflorescence, useful for vegetative propagation.

**BURR**, a globose prickly excrescence.

**BUTtRESSED**, (stem) having vertical ridges or projections at base.

**CADUCOUS**, falling off very early.



CAESPITOSE, tufted; growing in tufts.

CALLUS, An abnormally thickened part; in grasses an extension of the flowering bract below its point of insertion adhering to the axis of the spikelet.

CALYPTRA, cap.

CALYPTRATE, capped; separation of calyx or corolla from the flower in the form of a cap.

CALYX, collective name for sepals; outer whorl of floral leaves outside corolla.

CAMBIUM, a zone of tender thin-walled meristematic cells separating the wood from the bark in Dicotyledons, causing secondary thickening.

CAMPANULATE, bell - shaped.

CAMPYLOTROPOUS, (ovule) curved or horse - shoe shaped.

CANESCENT, grey or hoary.

CAPITATE, head-like; having a globose head.

CAPITULUM, a dense head of flowers.

CAPSULE, a dry dehiscent syncarpous fruit.

CARPEL, component part of an ovary.

CARUNCLE, a small hard aril or outgrowth on seed.

CARYOPSIS, a one-seeded dry indehiscent fruit in which the pericarp and the testa are fused together as in grasses.

CATKIN, a pendulous spike of unisexual flowers with scaly bracts.

CAUDATE, having a tail.

CAUDEX, trunk or stock.

CAULINE, on the stem; relating to stem.

CELL, structural unit of a plant; cavity of an ovary or anther.

CENTRIFUGAL, away from centre.

CENTRIPETAL, towards centre.

CHARTACEOUS, thin and flexible; of papery texture.

CIRCINATE, (aestivation) rolled up like a watch spring from tip.

CIRRHOSE, having tendrils.

CLADODE, stem assuming the form and function of a leaf.

CLAVATE, club-shaped; slender below and gradually thickened upwards.

CLAWED, (petal) having a narrow base.

COCCUS, one-seeded part of a schizocarp.

COHERENT, connate; union of similar parts.

COLLATERAL, placed side by side.

COMOSE, having a tuft of hairs (coma).

CONDUPLICATE, folded lengthwise, along midrib.

CONE, a scaly multiple fruit.

CONNATE, union of similar parts.

CONNECTIVE, tissue connecting the anther lobes.

CONNIVENT, convergin.

CONTORTED, (aestivation) twisted.

CORDATE, heart-shaped.

CORIACEOUS, leathery; tough and thick.

CORM, a modified underground thickened stem.

COROLLA, collective term for petals.

CORONA, appendage or outgrowth.

CORYMB, a raceme in which the pedicels vary in length to bring all the flowers to one level or plane.

COTYLEDON, a seed-leaf.

CRENATE, with rounded teeth.



- CRENULATE, with small rounded teeth.
- CRISTATE, crested.
- CRUSTACEOUS, hard, thin and brittle.
- CUCULLATE, hood-shaped.
- CULM, stem of grass, especially bamboo.
- CUNEATE, wedge-shaped.
- CUPULAR, belonging to, or shaped like, a cup.
- CUPULE, cup-like involucre of thickened bracts supporting the nut of oak.
- CUSPIDATE, gradually tapering to a rigid point.
- CYME, an inflorescence of the definite or centrifugal type, in which each successive branch ends in a flower after bearing one or more bracteoles, from whose axils the branching is continued.
- CYPSELA, a one-seeded dry indehiscent inferior fruit, with or without adnate calyx.
- CYSTOLITH, a cell containing crystalline concretions of calcium carbonate.
- DECIDUOUS, (leaves) falling away from; (plants) which are leafless for a part of the year.
- DECLINATE, bent to one side.
- DECURRENT, running down into ; (leaves) when the blade prolongs down the insertion on the stem.
- DECUSSATE, successive pairs alternating at right angles.
- DEFINITE, (stamens) not exceeding twenty in number; cymose.
- DEHISCENCE, opening at maturity.
- DELTOID, triangular in outline or section.
- DENTICULATE, finely toothed.

DIADELPHOUS, (stamens) when filaments unite into 2 bundles.

DICHOTOMUS, forked in pairs.

DICLINOUS, (flowers) unisexual.

DIDYMOUS, slightly 2-lobed or in pairs.

DIDYNAMOUS, (stamens) with 2 long and 2 short filaments, when there are 4 stamens.

DIFFUSE, loosely spreading.

DIGITATE, finger-like; palmate.

DIMORPHIC, (flowers) having 2 forms.

DIOECIOUS, (plants) with male and female flowers on separate individuals.

DISK, enlargement of the thalamus in the form of a cup.

DISSEPIMENT, partition in fruit.

DISTICHOUS, 2-ranked arrangement.

DISTINCT, free from one another.

DIVARICATE, spreading widely apart.

DORSAL, back; the side away from the axis.

DRUPACEOUS, like drupe.

DRUPE, a fleshy or fibrous fruit with bony or hard endocarp.

ECHINATE, set all round with sharp bristles.

EGLANDULAR, without glands.

ELLIPTIC, tapering equally to both ends.

ELLIPTICAL, elliptic.

EMARGINATE, notched at tip.

EMBRYO, young plant in the seed.

ENDEMIC, confined to particular locality.

ENDOCARP, inner layer of fruit-wall (pericarp).

ENDOSPERM, albumen; reserved food outside embryo.

ENSIFORM, sword-shaped.

ENTIRE, without marginal notches; plain.

EPICALYX, extra calyx, formed by bracteoles.

EPICARP, outer layer of fruit-wall (pericarp).

EPIDERMIS, outer skin.

EPIGEAL, (germination) with cotyledons coming above ground.

EPIGYNOUS, growing upon or adnate to top of ovary.

EPIPETALOUS, inserted on petals.

EPIPHYTE, a plant growing on, but not nourished by, another plant.

EPIPHYTIC, having the habits of epiphytes.

EQUILATERAL, equal-sided.

EVERGREEN, (trees) which are never wholly devoid of foliage.

EXALBUMINOUS, without albumen.

EXOTIC, not native; (species) introduced from another country.

EXSTIPULATE, without stipules.

EXSERTED, projecting outwards.

EXTRORSE, (anthers) opening away from centre of flower.

FALCATE, sickle-shaped.

FAMILY, a group of allied genera.

FASCICLE, a dense cluster.

FERRUGINOUS, rust-coloured.

FILAMENT, anther stalk.

FILIFORM, thread-like; long and slender.

FIMBRIATE, fringed.

FISTULAR, hollow.

FLORA, catalogue of plants growing in a country.

FOLIACEOUS, leaf-like.

FOLIAGE, leaf.

FOLLICLE, a monocarpellary dry dehiscent fruit,  
dehiscing only on ventral suture.

FEVEOLATE, impressed with small pits.

FREE-CENTRAL, (placenta) of a 1-celled ovary when it  
is like a column in the centre bearing  
ovules.

FUGACEOUS, falling early.

FULVOUS, orange-yellow; tawny.

FUNICLE, stalk of an ovule or seed.

FURCATE, forked.

FUSIFORM, spindle-shaped; solid and tapering at both  
ends.

GAMOPETALOUS, having combined petals.

GAMOSEPALOUS, having combined sepals.

GEMINATE, in pairs (doubled).

GENERA (pl), GENUS, group of closely related species,  
indicated by the first name of a  
plant.

GIBBOUS, with pouch-like swelling or projection on one  
side.

GLABRATE, somewhat glabrous.

GLABRESCENT, becoming glabrous.

GLABROUS, without hairs.

GLAND, an organ secreting fluid.

GLANDULAR, having glands.

GLAUSCESCENT, somewhat glaucous.

GLAUCOUS, bluish-green often with a fine bloom.



GLOBOSE, almost spherical.

GLOCHIDIATE, with barbed bristles.

GLUMACEOUS, resembling glumes.

GLUME, chaffy bract-like scale of the inflorescence of grasses.

GLUTINOUS, sticky.

GREGARIOUS, growing or tending to grow in groups of the same species.

GYNOECIUM, pistil; collective name for the female part of the flower.

GYNOBASE, an elongation of the torus on which the pistil rests.

GYNOPHORE, stipe or stalk supporting the ovary.

HASTATE, shaped like the head of a spear; with 2 pointed lobes projecting perpendicular at the base to the stalk.

HAUSTORIA (pl.), HAUSTORIUM, sucking roots of parasites.

HEARTWOOD, duramen; hard inner wood.

HERMAPHRODITE, (flowers) bisexual.

HETEROGAMOUS, (head) with florets of different sexes.

HETEROMORPHOUS, variation from normal structure.

HILUM, the scar where the stalk separates from the seed.

HIRSUTE, thickly covered with long and somewhat stiff hairs.

HISPID, beset with rough bristly hairs.

HOMOGAMOUS, (head) with florets of the same sex.

HOMOLOGOUS, similarity in origin or descent.

HYALINE, transparent.

HYPOCARP, thickened peduncle resembling fruit below the nut.

HYPOCRATERIFORM, salver-shaped; with slender tube abruptly expanding into flat horizontal limb.

HYPOGYNOUS, inserted below ovary.

IMBRICATE, (aestivation) overlapping.

IMPARIPINNATE, pinnate with a terminal leaflet.

INCISED, cut sharply and irregularly.

INCLUDED, not projecting.

INCOMPLETE, (flower) wanting in one or more kinds of floral whorl.

INDEFINITE, too many.

INDEHISCENT, not opening at maturity.

INDIGENUS, genuinely native.

INDUMENTUM, hairy covering.

INDUPLICATE, having the margins bent abruptly inwards.

INFERIOR, inserted below.

INFLORESCENCE, collection of flowers on stem.

INFUNDIBULIFORM, funnel-shaped.

INNATE, imbedded; borne on the apex of the support.

INTEGUMENTS, coats of an ovule or seed.

INTERPETIOLAR, (stipules) between petioles.

INTRAMARGINAL, (nerves) running parallel to leaf margin.

INTRAPETIOLAR, (stipules) of the same leaf when connate by their margins on the axil.

INTRORSE, (anthers) opening towards centre of the flower.



**INVOLUCRE**, a whorl of bracts supporting a flower cluster.

**INVOLUTE**, rolled inward from margins on the upper side.

**IRREGULAR**, (flower) wanting in symmetry.

**ISOMEROUS**, (flower) with equal numbers in every whorl.

**LABIATE**, lipped.

**LAC**, a resin formed as an excretion from the skin of the lac insect living on certain plants.

**LACERATE**, irregularly divided by deep incisions.

**LACINATE**, fringed or slashed with deep and narrow incisions.

**LANCEOLATE**, lance-head shaped; 2-4 times as long as broad, tapering gradually towards tip.

**LAX**, diffuse; when flowers and fruits are not closely arranged on the axis.

**LEGUME**, a dry dehiscent fruit of one carpel, dehiscent on both margins (sutures).

**LENTICEL**, a breathing pore on the bark, appearing as protruded powdery spots.

**LENTICELLATE**, having lenticels.

**LENTICULAR**, shaped like a biconvex lens.

**LEPIDOTE**, with small scurfy scales.

**LIGULATE**, strap-shaped.

**LIGULE**, a scarious projection from the upper end of leaf-sheath of grasses.

**LIMB**, the expanded part of a gamopetalous corolla; the upper part of a petal.

**LINEAR**, long and narrow.

**LIP**, projecting anterior part of an irregular corolla or calyx.

LITTORAL, growing on or along the sea shore.

LOCULICIDAL, dehiscence which takes place through the back of chambers or cells.

LOCULUS, cell of an ovary.

LODICULE, small scale representating perianth of grasses.

LYRATE, (leaf) divided with large terminal lobe; resembling violin (lyre).

MARCESCENT, withering without falling off.

MEDULLA, pith.

MESOCARP, middle layer of pericarp (fruit-wall).

MICROPYLE, an opening or hole at the top of ovule or seed.

MITRIFORM, one which is entire at the base.

MONADELPHOUS, (stamens) connate by their filaments into one bundle.

MONILIFORM, like a row of beads.

MONOCOTYLEDON, plant or seed with one cotyledon.

MONOECIOUS, male and female flowers (unisexual) on the same individual plant.

MONOPODIAL, (growth) of a simple axis by means of a terminal bud.

MUCILAGE, a gummy secretion.

MUCRONATE, (tip) with a short straight stiff point.

MULTIFID, cleft into many lobes or segments.

MULTIPLE, (fruit) composite; a single fruit derived from an inflorescence.

MULTISERiate, in many series or rows.

MURICATE, with hard tubercles.

MUTICOUS, blunt; awnless.

NECTARY, a honey secreting gland.

NEEDLES, leaves of conifers.

NERVES, lateral ribs or veins of a leaf.

NODE, part of stem from where the leaf springs.

NUT, a hard indehiscent 1-seeded fruit from a syncarpous ovary.

NUTLET, diminutive of nut.

OB, inverted.

OBLONG, much longer than broad with sides nearly parallel.

OBSOLETE, rudimentary; imperfectly developed.

OPERCULUM, lid.

OPPOSITE, (leaf) two at a node, at angle  $180^\circ$ .

ORBICULAR, circular in outline.

ORDER, group of closely related families of plants.

ORTHOTROPOUS, (ovule) straight.

OVARY, egg-shaped in outline with broad end towards base.

OVOID, oval-shaped.

OVULE, immature seed in the ovary.

PALEA, innermost glume of the flower of grass.

PALEACEOUS, chaff-like.

PALMATE, digitate; arranged like the digits of a palm.

PANDURIFORM, fiddle-shaped; drawn in at the middle.

PANICLE, an open mixed inflorescence, racemose or cymose or compound inflorescence.

PAPILIONACEOUS, (corolla) butterfly-shaped.

PAPILLA, a soft superficial protuberance or gland.

PAPPUS, tuft of hairs, bristles, etc.

PARASITE, plant growing on another plant and drawing nourishment from it.

PARIETAL, (placentation) on the walls of a 1-celled ovary.

PARIPINNATE, abruptly pinnate; evenly pinnate; pinnate with even number of leaflets.

PATENT, spreading.

PEDICEL, flower stalk.

PEDICELLATE, (flower) having pedicel.

PEDUNCLE, stalk of an inflorescence or flower or a fruit.

PEDUNCULATE, having peduncle.

PELLUCID, transparent.

PELTATE, circular with stalk inserted near the centre.

PENDULOUS, drooping; hanging.

PENNINERVED, pinnately nerved.

PENTAMEROUS, (flower) with 5 numbers in each whorl.

PERIANTH, (undifferentiated) calyx and corolla.

PERICARP, fruit wall.

PERIGYNOUS, inserted around but away from the ovary.

PERSISTENT, remaining attached.

PERULATE, furnished with protective scales.

PETAL, one of the members of the corolla.

PETALOID, resembling petal.

PETIOLATE, having petiole.

PETIOLE, leaf stalk.

PETIOLULE, stalk of a leaflet.

PHANEROGAM, plants having the organs of reproduction viz. stamens and pistil.

PHLOEM, outer part of vascular bundle transporting prepared food materials; bast.

PHYLLODE, leaf-like petiole or rachis.

PILOSE, with soft scattered hairs.



**PINNA, PINNAE** (pl), leaflet or primary division of bi  
(or) tri-pinnate leaf.

**PINNATE**, arranged on either side of a common axis;  
feather type.

**PINNULE**, secondary divisions of pinnate leaf.

**PISTIL**, female organ of a flower.

**PISTILLATE**, (flower) having pistil.

**PISTILLODE**, rudimentary or sterile pistil.

**PLACENTA**, tissue in the ovary to which the ovules are  
attached.

**PLACENTATION**, arrangement or distribution of the  
placentae in the ovary.

**PLAITED**, folded in longitudinal plaits; plicate.

**PLICATE**, plaited.

**PNEUMATOPHORE**, breathing root.

**PLUMOSE**, feathered; having fine hairs.

**POD**, legume; a dry dehiscent many-seeded fruit when it  
is much longer than broad.

**POLLEN**, powder-like grains contained in anther cells.

**POLLINATION**, transference of pollen to the stigma.

**POLLINIA** (pl), **POLLINIUM**, united mass of pollen.

**POLYDELPHOUS**, (stamens) united by their filaments  
into many sets or bundles.

**POLYGAMOUS**, with bisexual and unisexual flowers on  
one or different plants of the same  
species.

**POME**, a false fleshy fruit derived from an inferior ovary  
as in Apple or Pear.

**POSTERIOR**, side nearest to the axis.

**PRAEMORSE**, as though the end were bitten off; bitten  
at the end.

PRICKLES, sharply pointed projections of the epidermis.

PROCUMBENT, lying flat to the ground.

PSEUDOCARP, false fruit; fruit in which parts other than  
ovary has developed to form the fruit.

PUBERULOUS, minutely pubescent.

PUBESCENT, covered with short soft straight simple  
hairs; downy.

PUNCTATE, dotted with small punctures or glands.

PUSTULAR, with small blister-like elevations.

PUTAMEN, stone of a drupe.

PYRENE, a single stone of a drupe; druplet.

PYRIFORM, pear-shaped.

QUINCUNCIAL, (aestivation) imbricate; two in, two out  
and one partly in and partly out.

RACEME, an inflorescence with main stem that grows  
steadily onwards bearing flowers in acropetal  
succession.

RACEMOSE, of raceme type.

RACHILLA, a secondary axis in the inflorescence of  
grasses.

RACHIS, stalk of a compound leaf.

RADICAL, (leaf) apparently springing from the root.

RADICLE, axis of embryo below the cotyledons which  
forms the root.

RAPHE, the ridge where the stalk is attached to side of  
ovule.

RAPHIDES, needle-shaped crystals of Calcium oxalate.

RAY FLOWERS, ligulate flowers of head.

• RECEPTACLE, torus ; thalamus upon which the flower  
is borne.

REGULAR, (flower) symmetrical; actinomorphic.



RENIFORM, kidney-shaped.

REPAND, slightly sinuate; wavy.

RESIN, product of secretion or disintegration, usually found in special cavities or passages; insoluble in water, soluble in alcohol, ether, etc.

RETICULATE, net-work like.

RETUSE, with a shallow notch.

REVOLUTE, rolled inward from margins on the lower side.

RHIZOME, an underground creeping stem with reserve food like ginger.

RHOMBOID, RHOMBOIDAL, shape with four sides more or less equal and lateral obtuse angles.

ROSTRATE, beaked.

ROTATE, wheel-shaped.

ROTUND, round; circular in outline.

RUGOSE, wrinkled.

RUMINATE, marked by wavy transverse lines.

RUNNER, creeping stem rooted at nodes.

SAGITTATE, arrow-head shaped with two lobes at base projecting downwards.

SAMARA, a winged dry indehiscent fruit.

SAPWOOD, outer younger layers of wood.

SARMENTOSE, forming long runners.

SCABROUS, scurfy; rough to the touch owing to short stiff hairs.

SCAPE, a stalk from the base of plant bearing only flowers.

SCAPIGEROUS, with flowers borne on scape.

SCARIOUS, thin, dry, membranous, stiff and not green.

SCORPIOID, a 2-ranked monochasial cyme, coiled like a scorpion's tail.

SECUND, following or second; parts or organs directed to one side only, usually by torsion.

SEPAL, one of the members of the calyx.

SEPALOID, resembling sepal.

SEPTA (pl), SEPTUM, partition wall.

SEPTATE, divided by septa.

SEPTICIDAL, (capsule) opening along the septa.

SEPTIFRAGAL, (capsule) opening by the valves breaking away from the septa.

SERRATE, toothed with teeth directed forward.

SERRULATE, minutely serrate.

SESSILE, without stalk.

SETACEOUS, bristle-like.

SETOSE, beset with bristles, bristly.

SHEATH, a close fitting tubular case.

SIMPLE, undivided.

SPADIX, a spike with thickened axis bearing unisexual flowers covered by a spathe.

SPATHACEOUS, spathe-like.

SPATHE, an enlarged bract enclosing a spadix.

SPATHEOLE, a small secondary spathe on a partial inflorescence.

SPATHULATE, spoon-shaped.

SPECIES, group of individuals similar in all essential characters; subdivision of genus.

SPIKE, a raceme with sessile flowers.

SPICATE, resembling spike.

- SPIKELET, a secondary spike; ultimate flower bearing stem of grasses.
- SPINE, a strongly pointed woody process, generally originating from wood tissue.
- SPINESCENT, spine-like.
- SPINOUS, with spines.
- SPORE, an asexual reproductive cell.
- STAMEN, male organ of a flower consisting of filament and anther.
- STAMINATE, (flower) male.
- STAMINODE, sterile or rudimentary stamen.
- STANDARD, (petal) posterior odd petal of a papilionaceous corolla.
- STELLATE, star-shaped; with radiating rays like the points of a star.
- STIGMA, receptive surface of pistil.
- STIGMATIC, relating to stigma.
- STIPE, stalk.
- STIPLEL, stipule of a leaflet.
- STIPELLATE, having stipels.
- STIPULATE, having stipules.
- STIPULE, an outgrowth at base of leaf, one on either side of leaf base.
- STOMA, STOMATA (pl), a breathing pore on the epidermis of leaf.
- STONE, hard endocarp of drupe.
- STRIATE, with fine parallel lines.
- STRIGOSE, with appressed stiff hairs or bristles.
- STYLE, stalk supporting the stigma.
- SUBSESSILE, nearly sessile.

SUBULATE, awl-shaped; narrow tapering and somewhat stiff.

SUCKER, a shoot arising from below ground.

SULCATE, furrowed; grooved.

SUPERIOR, growing above.

SUTURE, line of junction or union.

SYCONIUM, a multiple fruit like that of fig.

SYCONUS, syconium.

SYMMETRICAL, (flower) having the same number of members in each whorl.

SYNCARPOUS, of combined carpels.

SYNGENESIOUS, (stamens) united by their anthers only, filaments remaining free.

TEGMEN, inner seed-coat.

TENDRIL, a thread-like organ which clasps round supports in climbing.

TERETE, rounded in cross section; cylindrical.

TERNATE, (leaf) in whorls of threes.

TESTA, outer seed-coat.

TETRADYNAMOUS, (stamens) when there are 6 stamens of which 2 are of one length and 4 are of a different length.

TETRAMEROUS, (flower) having 4 members in each whorl.

THALAMUS, the part of floral axis supporting the floral whorls; torus; receptacle.

THYRSUS, an ovate panicle.

TOMENTOSE, with tomentum.

TOMENTUM, cottony felt of soft hairs.

TORULOSE, cylindrical with slight contractions at intervals.



TORUS, thalamus.

TRIBE, division of a family.

TRICHOTOMOUS, branching in threes.

TRIGONOUS, 3-cornered in cross section.

TRIMEROUS, (flower) having 3 members in each whorl.

TRIMORPHIC, (flowers) having 3 forms of bisexual  
flowers produced by the same species.

TRIQUETROUS, three-cornered.

TRUNCATE, with broad straight end as if cut off.

TUBE, lower united portion of calyx or corolla.

TUBER, swollen underground stem or root, in which  
reserve food materials are stored.

TUBERCLE, knobby projections.

TUBEROUS, swollen like a tuber.

TUMID, swollen.

TURBINATE, cone-shaped.

TURGID, tensioned or swollen with water.

UMBEL, a receme in which all the pedicellate flowers  
spring from the top of the peduncle.

UNDULATE, wavy.

UNISEXUAL, (flower) having only one sex.

URCEOLATE, urn-shaped; tubular and contracted at or  
below mouth.

UTRICLE, a 1-celled, 1-seeded dry fruit with thin and  
more or less loose fruit wall.

VALVATE, (aestivation) touching and not overlapping.

VARIETY, a group of individuals different from others of  
the same species in certain striking characters  
which, however, are not of a nature to justify  
specific rank; subdivision of species.

VENATION, arrangement of veins in leaf.

VENTRAL, (side) upper, towards axis.

VENTRICOSE, inflated, swelling unequally on one side.

VERRUCOSE, warty; tubercled.

VERSATILE, (anther) swinging freely on filament.

VERTICILLATE, in whorls; whorled; arranged in a ring around an axis.

VILLOSE, with long soft simple hairs.

VILLOUS, villose.

VISCID, stickly.

VIVIPAROUS, germination in the fruit.

VIVIPARY, viviparous.

WHORL, circle (round an axis).

WHORLED, (leaf) more than two at a node.

WING, thin memberanous appendage; side petal of papilionaceous corolla.

WOOD, timber.

XEROPHYTE, plants living in places where water supply is limited.

XYLEM, wood tissue of vascular bundle.

ZYGOMORPHIC, (flower) which can be divided vertically into two similar halves along only one plane.



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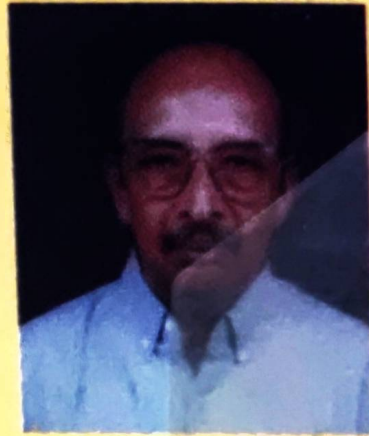
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